ICE CREAM TRADE JOURNAL



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THE ICE CREAM TRADE JOURNAL

Vol. XVII

No. 1

A PRACTICAL
HELPER
FOR
ICE CREAM
MANUFACTURERS
AND A
CHRONICLE
OF TRADE EVENTS



Official Organ of

The National Association of Ice Cream Manufacturers. The Association of Ice Cream Supply Man.

The Ass'n of Ice Cream M'I'rs of New York State. The Association of Ice Cream M'I'rs of Pennsylvania. The Ohio Association of Ice Cream Manufacturers. The Indiana Association of Ice Cream Manufacturers. The Association of Ice Cream Mi'rs of Iows. The Association of Ice Cream Mi'rs of Maryland. New Begland Association of Ice Cream Manufacturers. The Missouri Association of Ice Cream Manufacturers. The Ice Cream Mi'rs' Ass'n of West Virginia, Virginia Ice Cream Manufacturers' Association. Arkansas Association of Ice Cream Manufacturers. Minnesota Association of Ice Cream Manufacturers. Minnesota Association of Ice Cream Manufacturery. Illinois Association of Ice Cream Manufacturery.

North Carolina ice Cream Manufacturers' Association.
Canadian Association of ice Cream Manufacturers.



JANUARY, 1921

PUBLISHED MONTHLY BY THOMAS D. CUTLER 171MADISON AVE. NEW YORK

TWO DOLLARS



Entered as second-class matter, April 11, 1907, at the postoffice at New York, N. Y., under the Act of March

FOR ICE CREAM

<u>low</u>ney's

COCOA POWDER CHOCOLATE LIQUORS

We shall be glad to quote prices and to send samples

Chocolate Coatings ALSO

Cocoa Butter

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THE OLD RELIABLE

Arabian Coffee

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It has stood the test for many years

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FAMOUS

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Vanilla and Tonka Blend No. 52 Special

Finest Flavor Made

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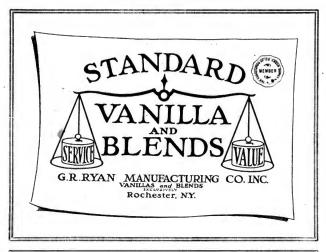
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for lanuary functions, including balls and banquets, receptions and parties—not for-getting St. Valentine's Day and Washington's Birthday affairs.

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Never add any other flavor or color to Caramala for Caramala Ice Cream.

PRICES:

Less than 5 gals., \$7.00: 5 gale., \$6.75; 10 gale., \$6.50; 25 gals., \$6.25; 50 gale, and over, \$6.00.



Caramaia, an Pure Food Product, guaranteed under all Federal and State Food Laws. It is not an imitation of caramel or burnt sugar flavor. It is a new, distinct and better flavor.

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CARAMALA is now virtually universally known throughout the United States and Canada, and its users are enjoying an ever-increasing CARAMALA business, embracing also its manifold combination uses.

CARAMALA MERIT is recognized by ice cream manufacturers not alone in Caramale flavoring value, as evidenced by the instant and sustained CARAMALA response from the public, but also in the CARAMALA physical improvement in CARAMALA ICE CREAM, or any ice cream in which CARAMALA presents in a less amount than the full flavoring requirements, as in CARAMALA NUT ICE CREAM, CARAMALA ICE CREAM PUDDING, etc.

CARAMALA, a fluid, requires neither waiting nor preparation.

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That's the Way we Pack Our Cold Process Strawberry

That's why it has so much flavor and why it makes the ice cream taste as if delicious, deadripe, fresh-picked berries, had been used in the making of it.



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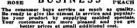
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Gelatine is the most efficient of all stabilizers for Ice Cream

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Look for the red drumyour purity protection

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TRIED. APPROVED AND USED BY THE ICE CREAM TRADE FOR THE PAST FIVE YEARS

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We also pack NULOCRYSTAL in a special non-leakable container holding about the same weight.

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Specially Prepared

For Manufacturers

ICE CREAM.

Sherbets. Fruit Frosts

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Prices No Higher Than Lower-Testing Gelatine

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Its use insures good texture and a smooth cream.

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In this New McLaren "Real Cake" Cone we offer the trade a sugar-sweetened article that is in a class by itself.

It is scientifically designed to ship with a mini-mum amount of breakage, is distinctive in appearance, and at the same time possesses the superior eating qualities that have always characterized McLaren's Ice Cream Cones.

EXCLUSIVE FEATURES

1—Smoothly Moulded Ring Around Top.

Strengthens top of cone.

Prevents breakage when filling with ice Improves appearance.

2-The Name "McLAREN" Moulded in Rim of Cone.

Prevents imitation.

Guarantees quality.

3-Breakage Protection Ring.

Prevents wedging action of cones in ship-ping. Keeps them from splitting and sticking to-gether.

Strengthens top of conc.

(lilustration shows how cones rest entirely on this ring. Walls of cones do not touch.)

This new Cone is the result of years of study and the investment of many thousands of dollars. The manufacturers have aimed to make the very best cake cone possible, and at the same time keep the price within easy reach of every retail dealer.

Enterprising jobbers will be the first to show this new product in their territories. It is sure to be a winner for next season. Write for samples and very low introductory price.

MELAREN PRODUCTS COMPANY DAYTON





How Cerelose assures you a uniform high quality standard

Successful ice cream manufacturers use Cerelose in conjunction with cane sugar, because Cerelose emphasizes the richness of the butter fat.

Butter fat is not only the most expensive item in ice cream making—but the most important in relation to maintaining high quality.

Ice cream manufacturers, in this fact alone, can see why Cerelose is now being preferred everywhere.

Higher digestibility will be given to your ice cream with the help of Cerelose. The flavor and texture will show a decided improvement,

Cerelose sells for several cents less per pound than cane sugar.

CORN PRODUCTS REFINING COMPANY

17 Battery Place, New York City

Note: - Formula cheerfully furnished upon request.



TURNBULL CONE & MACHINE CO.

Mfrs. of Automatic CAKE Cone Machinery

Chattanooga, Tenn.

419 Fort St.



BAKED ICE CREAM

can now be served by your dealers quickly and conveniently by means of a new small electric apparatus.

All users of WASHBURN'S IMPROVER who are interested in increasing their sales with the above, write us at once for details.

This is part of the Service Department for WASHBURN'S users.

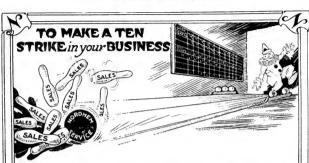
Good results can be easily obtained using WASHBURN'S—ask any of the 1000.

In writing, state voltage of electric light circuit in your city.

A. Daigger & Co.

54 W. Kinzie Street

Chicago, U. S. A.



For Selling Punch That Will Carry Your Product

NORDHEM ADVERTISING AND SELLING SERVICE for ICE CREAM Manufacturers meets every quality requirement of a Quality Product.

NORDHEM SERVICE means Sales, SALES, and MORE SALES.

You have the machinery to make good ice cream.

We have the machinery that will sell it. Let's Get Together—



One of our representatives will be in your neighborhood in the near future. Why not make an appointment now?

IVAN · B · NORDHEM COMPANY

Advertising and Selling Service for Ice Croam Manufacturers & West 40 "Street" · · · New York Citu



OVER 2000
ICE CREAM
MANUFACTURERS
REGULARLY USE
GUMPERT'S
ICE CREAM
IMPROVER

S.GUMPERT & CO. Brooklyn, New York



ICE CREAM



Sign Advertising Will Increase Your Ice Cream Sales

- Educate —your Dealers to sell more Ice Cream through Advertising Displays in your Dealers' Windows.
- Educate—the consuming public concerning the Quality and Food Value of your Ice Cream by attractive Window Trims in your Dealers' Windows.
- Educate—the entire community to the Tempting, Wholesome, Refreshing Goodness of your Ice Cream by the use of eyecatching out-door displays of Metal, Fibre and Muslin Signs.
- Sign Advertising—keeps your trade name and slogan prominently displayed. Make it a not-to-be forgotten name by the use of

Burdick-Garrison Company Signs

The effective use of out-door signs and window displays will result in that "occasional purchaser" becoming a "regular Buyer."

As "seeing is believing" so too is BUYING the result of SEEING. Create a demand for your product by making the people see a "reminder" of your Ice Cream everywhere they look.

Do It With Signs

We manufacture an unlimited variety of out-door signs and Window Displays of all kinds on metal, cardboard and cloth.

Special designs and quotations on application.

The BURDICK-GARRISON COMPANY

Two Twenty Live Tourth Avenue New York

Advertising Specialists to the Ice Cream Manufacturer

THE NATIONAL DISH

The Grand Playids





Much of Your Success Next Season Will Depend on Your Choice and Supply of Ice Cream Cabinets



If there is any one thing the history of the ice cream cabinet business emphasizes, it is the value of anticipating requirements far in advance. From the standpoint of profits, and the service you will be able to render your customers now, right now, is the most opportune time to settle the cabinet proposition for next season.

If you are not familiar with the Grand Rapids Line this is the time to send for the catalog. It will show you why such a big percentage of the prominent ice cream manufacturers specify Grand Rapids Cabinets year after year. It will show you how to practice true economy in this department of your business.

The importance of immediate action must be stressed. Take up your requirements with us at once

Grand Rapids Cabinet Company

SHARROWS IN CHOCOLATE COOLER COMPANY

80-84 Alabama St., N. W., Grand Rapids, Mich.

New England Sales Office and Warehouse Merrow Bros., Inc. 44 N. Market St., Boston, Mass. South Eastern Sales Office and Warehouse Cherry-Bassett Co. 23 So. Charles St., Baltimore, Md.

North Western Sales Office and Warehouse A. C. Black 515 Lumber Exchange, Minneapolis, Minn.

The C. Nelson Ice Cream Cabinets (Patented)

C. NELSON BRICK CABINET Patented May 8, 1908



42 QT. BRICK CABINET WITH ICE RAIL. Patents, May 8, 1906; Sept. 9, 1919





"Confessed the best when put to test"

The C. Nelson Patented Ice Cream Cabinets are especially adapted to Hot Climates—South America, Honolulu, Philippines, Cuba and all Southern States, where others fail.

We've Got It On Them All

Because We Are:

- Specialists in the manufacture of Ice Cream Cabinets.
- 2nd. Have had 30 years' actual experience in the manufacture and keeping of Ice Cream, from which practical experience the Nelson Cabinet was evolved.
- 3rd. Nelson Cabinets are constructed of California Red Wood and White Cedar. Both sanitary and everlasting.
- 4th. For this reason they are proof against Rust, Brine, Leaks and Decay.
- 5th. They are Insulated with Granulated Cork, the best non-conductor of heat and cold known.
- 6th. They will save their cost in three months' service.
- They will keep Ice Cream in perfect condition 24 to 36 hours with one packing of Ice and Salt.
- 8th. They will last a lifetime.
- 9th. We manufacture Ice Cream Cabinets exclusively, and build but one grade—This we guarantee.

The 42-quart brick cabinet has a two-compartment container, thus giving the advantage of a double cabinet with single ice space.

ATTENTION

Responsible parties (particularly wholesale ice cream dealers) may order from 1 to 100 Nelson cabinets, place them in practical use, and after 30 days, if not entirely satisfactory, return at our expense for freight both ways.

CATALOGUE AND PRICES UPON REQUEST

C. Nelson Manufacturing Co.

23rd and Division Sts.

ST. LOUIS, MISSOURI



Cabinets and Tubs

are as good as their name and their looks

Built to live up to all that the name STOUT implies

Genuine Cedar Tubs—the best material obtainable for the purpose and stoutly put together to stand the "racket."

Cabinets that are built with full appreciation of the Ice Cream Maker's needs in point of first cost economy and lasting qualities.



Don't place your orders before you let us show you that we know what you need and are actually producing it. Write for Details and Prices.



Just look
at this
double bottom—securely splined (fillted) to-then look at one gether and firmly wedged inof the kind you are to place.

The Stout Crate Company Des Plaines, Ill.

CHICAGO OFFICE: 509 S. WABASH AVE.

difference.

Economy Ice Cream Cabinets

Economical—Efficient—Substantial

Most economical in use of ice—most efficient in preserving quality of cream—substantial construction and absolute insulation throughout. Most approved design and finish. Made in one to four compartment—sizes twelve and twenty quart. Either metal-lined or in tub cabinet.

A Word to the Ice Cream Manufacturer

Anticipate your requirements for the coming year. Place your order now and assure yourself of a complete supply of cabinets with which to meet the demands of your customers. Bear in mind: the sooner you order, the more promptly we can ship.

Write for prices and particulars.

Homer Manufacturing Company Homer City Pa.



BUY

The Quality Tub Covers

MADE BY

SCHOTT BROS. CO.

WEST SALEM, OHIO

Pioneers in the Manufacture of Tub Covers

Ice Cream Cabinets

The special construction of cabinets made by us insures durability and long life under all conditions.

THE PRICE IS REASONABLE

Send for Price List

American Retinning Co.
819-23 N. Lawrence St., PHILADELPHIA, Pa.

Just Off The Press



- OUR 1921 Booklet on

Schroeder Perfection

Cabinets

It is different,—and complete as the service it represents



Your Copy Is Ready — Send For It

"Insulation is the thing"

JOHN SCHROEDER LUMBER (O.

"A Dosen Cabinets or a Dosen Carloads"
WALNUT ST BRIDGE ... MILWAUKEE.WIS.

Brooks Cabinet



Our BRICK CABINETS, made entirely of wood, without inner or outer metal links, GUARANTEED NOT TO LEAK.

Let us tell you all about them and our 1, 2, 3 and 4 compartment cabinets.

BROOKS CABINET COMPANY 1000 Block Wa27th St., Norfolk, Va.

CABINETS

"Built right, price right, ARE RIGHT."
"NO EXPERIMENTING WITH OUR CABINETS."



WE HAVE SPECIALIZED IN BUILD-ING ICE CREAM CABINETS FOR 15 YEARS, AND KNOW WHAT THE TRADE DEMANDS,

Before placing orders elsewhere WRITE FOR PRICE LIST AND DISCOUNTS.

HENRY SHULTZ

Office and Factory 24-26 Cherry Street, New York City

TAG HOOKS

SAVE DOLLARS

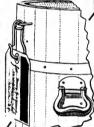
Why use expensive, untidy, time-losing strings or wires while tagging your tubs or pails of ice cream?

SNAP 'EM ON

And use our rustproof TAG HOOKS

Can't Rust Our new type of ag Hooks are lade of SPE-IAL SPRING RASS. They sell \$1.95 per hunge of including aples. Besides.

DALY BROS., enectady.



Wood Ice Cream Spoons are the most sanitary



(Pat. Jan. 14, 1919)

Not a paddle but a spoon, scooped out of a wooden block

Just what the public has been wanting in the way of single service ice cream spoons. The most sanitary ice cream spoons made.

Paper Sundae Dishes

Paper Ice Cream Dishes Both Round and Square

Tin Ice Cream Spoons

B. A. GRASBERGER & CO. Manufacturers of Little Dishes and Spoons in a Big Way

820-4 W. Moore St., Richmond, Va.

Order through your jobber. have no brokers or agents.

"MAKE IT PAY"

If a pleased customer is your best advertisement, why lose the advertisement nine times out of ten?

Tie Your Name to Your Product



Our tin ice cream spoons with your name stamped in the handle cost no more-probably less-than you pay for the plain kind, and they tell the customer who pleased him ten times out of ten.

WRITE FOR PRICES AND A SAMPLE

Our New Ice Cream Catalogue Will be Mailed Upon Request



Freezers; tools; cans and carry-outs; brick moulds; brick tanks; tubs; buckets; and a hundred and one other things on which you can make it pay to let us quote you.

Weissue Catalogues of Baker's Gools and Vtensils and Confectioner's Gools and Viensils

AUGUST MAAG

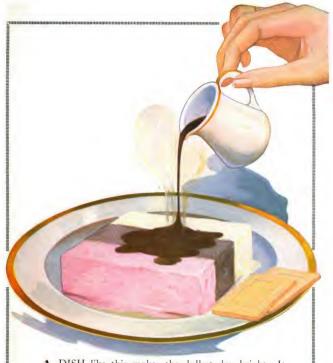
509-511 W. LOMBARD ST., BALTIMORE, MD.



THE ASSOCIATION OF ICE CREAM SUPPLY MEN is better prepared in 1921 to serve the ice cream industry than it has ever been before. From savage barter and trade to the world-wide modern interplay of industry and commerce, successful business moves from variations of one single motive — the motive of constructive selfishness. The selfish wish of The Association of Ice Cream Supply Men is that the ice cream manufacturers of the country may know success and profit far greater as the months of 1921 roll by. Its constructive purpose is to help make this possible by providing safety for the manufacturer in his buying of supplies... The ice cream industry of 1921 will march on to still greater things.

> Safety to the Buyer through the Fair Practices Code

The Association of Ice Cream Supply Men
1328 BROADWAY, NEW YORK



A DISH like this makes the dullest day bright. It makes you want ice cream, though the thermometer may register 40 below or the rain be falling in torrents. These luscious looking Four Color Process Reproductions are surprisingly economical to use.

FREDERICK C. MATHEWS COMPANY "SERVANTS TO THE DAIRY INDUSTRY" 685 MULLETT STREET, DETROIT, MICHIGAN

This four-page insert was produced complete by the Frederick C. Mathews Company



SHOW this Pineapple Sundae in the windows, at the fountains and in the parlors of your dealers and see your gallonage grow. These Four Color Process Reproductions make other people feel just like you feel now, hungry for ice cream.

And the cost of keeping them constantly displayed is surprisingly small.

FREDERICK C. MATHEWS COMPANY
"SERVANTS TO THE DAIRY INDUSTRY"
685 MULLETT STREET DETROIT, MICHIGAN

This four-page insert was produced complete by the Frederick C. Mathews Company



"I CAN'T Afford not to build up bigger sales" says a careful, cost-figuring ice cream manufacturer.

"And I want my increase to come in the cold months and the bad weather periods in the spring and summer."

With the Same Equipment and Payroll

most manufacturers could handle much more business in periods of bad weather, thereby enlarging their net profits for the year, as well as enormously increasing their prestige with the trade and with the public.

If You Are In This Class

it will pay you to secure a conference with one of our representatives. We equip you for every phase of an effective selling campaign and we make no charge for our services nor do we accept commissions from newspapers or other lines of business in connection with which our services may be rendered.

Asking for a conference involves no obligation on your part. Write, or wire at our expense, today.

FREDERICK C. MATHEWS COMPANY
"SERVANTS TO THE DAIRY INDUSTRY"
685 MULLETT STREET, DETROIT, MICHIGAN

This four-page insert was produced complete by the Frederick C. Mathews Company



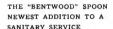
The picture of this Peach Layer Sundae will make the patrons of your ice cream dealers order ice cream in preference to anything else;

-if you see that it is displayed in their windows, at their fountains and in their parlors.

FREDERICK C. MATHEWS COMPANY DETROIT, MICHIGAN 685 MULLETT STREET

This four-page insert was produced complete by the Frederick C. Mathe





SANITARY PLATES
DISPLAY YOUR ADVERTISEMENT
IN COLOR-LINED WITH
GLASSINE PAPER



THE JOHN H. MULHOLLAND CO 145-47 N. 12th STREET PHILADELPHIA, PA.

WHITE PARA-PARCH



We claim this filled stock is the most excellent Ice Cream Paper manufactured.

Its moisture and air resistance is unparalleled.

It is freely removed from the cream, is beautiful in shade and texture and 100% pure. It also is most economical.

Let us ship you a trial lot and convince you.

We furnish all sizes: squares and circles, plain and printed.

Made expressly for you by

The Henle Paper Manufacturing Co., Inc. 535-545 EAST 79th STREET, NEW YORK



Progress Ice Cream Freezers

Modern construction of the very latest type. Made in two sizes, 50 quarts and 100 quarts capacities. Compact motor drive, with motor mounted above the freezing cylinder. The picture shows the front and side view with Irine connections. Substantial enamel base, with machine properly lalanced. The cylinder, supply tank, etc., are heavily nickel-plated. An excellent appearing machine of sterling worth and honest value.

The dasher is of the squirrel cage type, with two full sets of scraper blades. The inside section of the dasher turns one way and the outside the other way. This type of dasher gives maximum results and if easy to clean.

The opening for the fruit is made large so as to do away with the fruit funnel. Your man can put the fruit in without spilling or wasting any portion of it. The supply tank is of the proper size to prevent waste. The valve from the supply tank to the cylinder is simple, handy and satisfactory.

The gate is so made that one setting of the can under it will catch the cream—you don't have to kick the can into place—preventing waste.

The brine piping is hooked up so as to feed it into the space surrounding the freezing cylinder at two places, getting excellent efficiency out of the brine. One thermometer shows temperature of brine going in, and the other shows it going out.

going in, and in other shows it going out.

The gearing on the back end of the machine, is so housed in as to run continuously in oil. The motor covering is left open at the back to prevent overheating, yet it is protected on the front and sides so you can use a hose in cleaning without splashing water on the motor.

Write for descriptive matter and prices. We also make a 40-quart vertical and a 50-quart direct ammonia expansion style for the man who prefers either of these types of Ice Cream Freezers. Tell us in a letter, or on a postal card, what you want to do and we will help you plan and choose the best for your needs.

DAVIS-WATKINS DAIRYMEN'S MFG-CO.

ADDRESS NEAREST SALES OFFICE

JERSEY CITY, N. J. NORTH CHICAGO, ILL. KANSAS CITY, MO.



DENVER, COLO, SAN FRANCISCO, CAL, SEATTLE, WASH.

THE ICE CREAM TRADE JOURNAL

Vol. XVII

NEW YORK, JANUARY, 1921

No. I

ILLINOIS ASSOCIATION MEETS AT CHICAGO

Ice Cream Men of Illinois Have Interesting Oneday Program at Twenty-first Annual Convention

The twenty-first annual convention of the Illinois Association of Ice Cream Manufacturers was called to order in the Grey Room, Hotel Sherman, Chicago, at 10:30 A. M., December 9, 1920, by President G. E. Thompson, who presided.

The Chairman ealled on Secretary N. Loewenstein who read a joint report of the Secretary and the Treasurer which was accepted as read.

The President's address was read by Mr. Thompson as follows:

Every year it seems that the President must deliver an address, and who started the custom I do not know. However, in keeping with established practice, I shall endeavor to mention a few of the happenings to the ice cream industry during the past season.

As we are all aware, the ice cream business is one that is largely dependent upon weather conditions. The past summer was anything but a good summer for the industry from a weather standpoint, yet business conditions as a whole were so good and the people were so prosperous that even with the unfavorable weather that prevailed the ice cream manufacturer throughout the country did about the same amount of business as the season before. This was particularly true in Northern Illinois. Then in September, when the season is usually over, we enjoyed a period of extremely hot weather, which was very gratifying to the manufacturers, their volume of business being about as great as it was in July. October was also somewhat above normal in temperature, and as a result the business enjoyed by the manufacturers in this section was extremely good.

Quite a slump took place in business about two months ago. Prices on many commodities declined severely. This was particularly true of commodities which apparently had advanced out of all proportions to their true value; the swing of the pendulum brought these prices down with great rapidity. The advance in the price of ice cream from the

The advance in the price of ice cream from the pre-war period was not nearly so great as on most commodities, with the result that the decline on this article naturally has been rather slow. Then, too, there has been no appreciable decline in the price of ingredients entering into the manufacture of ice cream, and many manufacturers are still using high priced sugar and other articles.

The progress of the ice cream industry as a whole has been exceptionally pronounced within the past decade. Where ice cream was formerly considered a luxury or semi-luxury, it is now considered a food possessing the highest nutritive value, milk being its principal component part, with the addition of sugar, the energizing factor.

In this state we have been pioneers in developing sanitary ice cream factories. Two years ago
this Association was instrumental in having passed
by the legislature an amendment to the State Food
Law requiring ice cream manufacturers to be licensed before they could operate. The food department makes regular inspections to see that factories
are in sanitary conditions before a license is sisued,
and I am pleased to state that I know of no instance
where any of our members had difficulty in securing
a license, indicating that their plants are up to standard in every respect.

The past season was one of great worty and uncertainty for ice cream manufacturers. During the spring and early summer it was very difficult to obtain adequate supplies of sugar, and, when sugar was finally obtainable, many manufacturers purchased reserve stocks, as a result of which some of them are still working on 27e to 30s sugar.

was finally obtainable, many manufacturers purchased reserve stocks, as a result of which some of them are still working on 27c to 30c sugar. Because of the car shortage during the summer, many manufacturers had difficulty in securing an adequate supply of salt. This was equally true of adequate supply of salt. This was equally true of transit, with the result that the ice cream manufacturer was in continual hot water, so to speak, trying to keep going and to take care of the demand for his product.

Many of the down-state manufacturers had a great deal of trouble with the express company. The service was exceptionally had in many of the towns and shipments were allowed to lie around the depot and could not be moved. Considerable trouble was also experienced, in getting empties returned. This was often due to the failure of local agents to pick up the empties, and frequently when they did pick them up they failed to return them to the manufacturers as promptly as they should, with the result that a largely increased investment in tubs and cans was necessary to carry on shipping busi-

Recently the Interstate Commerce Commission permitted a change in the classification of ice cream shipments which granted an advance in weights on 5-gallon packers from 100 to 115 pounds. Inasmuch as this applies only to interstate traffic, I feel that this Association should do something to prevent this change of classification from taking effect in this State on intrastate traffic, particularly since the express company was granted a horizontal increase of

26% in rates, and since they fail absolutely, in most localities, to perform any pick-up and delivery service whatsoever.

In this connection I wish to call the attention of the members to the fact that a motor express system of transportation is being rapidly developed, and I believe ice cream manufacturers should encourage and take advantage of this system wherever possible. The goods are picked up at your door and delivered to your customer's door, and empties are likewise picked up and promptly returned to you.

I take this opportunity of thanking the officers and members for their kind co-operation during the past year.

W. W. Talcott, Chicago, was the next speaker on the program. Mr. Talcott spoke on the subject, "Sales and Advertising," demonstrating that advertising is essential to the complete development of an ice cream business.

"Cost Accounting" was the subject of a paper read by Howard O. Shedd, Chicago. Knowing what it costs to make, sell and deliver a gallon of icc cream is vital to the success of an ice cream business stated Mr. Shedd in his paper which took up a number of ways by which this could be accomplished.

The Chairman called on J. W. Merrigan, Jacksonville, who gave a short talk entitled "Let's Get Together." Mr. Merrigan said in part:

"Our President has told us a few moments ago that this Illinois Association was largely a family affair. Now, then, it shouldn't be much trouble for a family to get together, and as we attempt to analyze this sentiment or this slogan of "Getting Together," we find it closely connected with all the big things that have ever happened in our country. It dates back to the time of George Washington. It seems that he had the happy faculty of gathering men about him and filling them with enthusiasm and loyalty for the thing advocated, getting them to start out and win the fight, which they have done. So we find the spirit of get together and the spirit of '76 about the same thing. The same thing is true of Lincoln's time. Lincoln

had that happy faculty of getting men together and had that nappy factory or getting men together and filling them with thinking the Lincoln way, and get-ting results. We look about the City of Chicago here, this wonderful city, with all its advantages, its great system of parks and boulevards, everything that goes to make living worth while, and we find that is the essence of party co-operation, unity of purpose, concentration of thought. We go through the World War history and we see how the Allies sort of struggled along for a while until they furally got together and got someone to direct and then

they marched on to victory.

Take it in our own industry during the first years of the war. There were men probably in Congress who did not know the importance of our in-Those gentlemen might have placed their strong hand on our neck if it hadn't been for our efficient officers of the State and National Associations and the devoted members who gave freely of their time and went down to Washington and placed before those men the importance of our industry and showed how essential it was that they allow us to go forward, and not be throttled and held back. In our own State Association we have the sectional meetings and have an instance of where the strong men of our organization come down through the state and they give the little men the benefit of their advanced ideas and their new methods of doing business. It develops the business as a whole, raises it up on a higher plane. Now with this "Get Together" idea kept up it is

only a question of time until the ice cream industry will rank first amongst all the food producing items that are manufactured in this grand old country of

Charles J. Stewart, Decatur, in an address entitled, "Keeping the Plant Up to Standard," advocated keeping the ice cream plants of the state upto-date, in other words, as show places, advertising to the consumers that the plants were open for inspection at all hours and making it worth their while to visit the plants. Up-to-date plants go hand in hand with contented employees, believes Mr. Stewart, who concluded his address by showing how his company raised the standard of its employees.

At the request of the Chairman, Secretary Loewenstein reviewed the express situation of the past year after which the Chairman appointed the following committee to act with the Secretary in taking up express matters with the utilities commisson: T. H. McInnerncy, Chicago; Brnce Roszell, Peoria, and Chas, J. Stewart, Decatur.

Regarding the double tagging ruling Mr. Loewenstein said:

I believe the majority of the manufacturers are very much interested in the double tagging ruling. Last year I had several conferences with the traffic officials of the express company at New York and it was agreed that they would try out the plan of double tagging for the season of 1919, and if it was found that it was working a hardship on the manuresulting benefit to the express companies that they would themselves ask to have the rule rescinded. They included in their classification the statement that shipments of ice cream in tubs having shipper's name and address permanently painted, stenciled or branded thereon, may be accepted when bearing one address tag, properly marked. In that connection the Interstate Commerce Commission ruled in their report as fol-"Included in the schedule are proposed adlows: ditions to cancellations of, and changes in, certain items of the classification other than those hereinafter mentioned, to which no objection has been offered from any source, and to which respondent's reasons in justification has been submitted, that respondent has justified these items." would seem to indicate that the double tagging rule has been rescinded, but it will not be put into effect, of course, until the State Commissions have acted on these various classification changes,

The Chairman: Gentlemen, I see we have with us today one of the largest shippers and manufacturers of the State of Wisconsin, and we would like to hear a few words from Mr. Luick. I think he is pretty well versed in this shipment of ice cream, I understand he was down to Washington as one of the witnesses.

Mr. Luick: The Wisconsin Association has really done nothing as yet with reference to the raise in express rates, and, frankly, I am somewhat of the opinion that whatever we may do it won't do much good. I believe that the State Commissions, Railroad Commission, will confirm the raises, and I believe that we are ready for that advance. It may be possible that something may be done later on, but I doubt very much under present conditions that any railroad commission will rescind that order. The Wisconsin Commission, however, is taking up the matter and is going to make a fight before the Railroad Commission on the subject and will make every effort to hold it down. I don't believe they every enort to hold it down, I don't hence my will succeed. I don't know as there is any other information that I can give you. The raise is here, and I believe the shipper will have to pay it.

Mr. Loewenstein: Mr. Luick, I have a letter from the contraction of the Wisconstin Associate.

Mr. Cahey, the Secretary of the Wisconsin Association, in which he asks me for some of this information and some of the exhibits that we had so they would be in a position to contest the matter. Of course this is not a contest of the horizontal rate advance; it is merely on that estimated weight proposition.

Mr. Luick: I tell you, Mr. Secretary, I appreciate Mr. Cahey's statement of the matter, but, as I said before, I doubt whether there will be any results accrue from it. Our efforts before our Wisconsin Federal Trade Commission haven't led to very much. Naturally, we are going to fight it; we are going to do all we can, but I believe that we are in for the advance both ways, on the increased area and the increased weights, and I don't know as there will much good come from fighting it. But I do believe that the different state associations should put up as strong a fight as they can, because if one should win out there might possibly be some additional chance for the other fellow.

While I am on my feet there are one or two things I want to say. Don't let's kid ourselves into the idea that we are going to be able to continue war prices. What is the use of kidding outselves into the idea that we are going to get war prices, because we are not It wouldn't be fair if we did I believe that ice cream, just the same as anything clee, that ice cream, just the same as anything clee, from war prices, and I think you are all making a serious mistake if you don't look that matter straight in the face and follow the advice of the speakers that we have lad, some of them this morning, and speakers that we have had in former years, both state and national conventions, and know our costs, so that you can regulate your price according to your cost of production. I want to tell you looys we have load to the production with the price according to your cost of production. I want to tell you looys we have heard this quotation "The war is over," a good many times, but this is really the first time that we can be considered the other direction is over. Friesca are heading in the other direction is over. Friesca are heading in

Now, don't misunderstand me, there is one thing I want to warn you against right now, and that is, don't go into a panic, don't let go of your prices just simply because the other fellow does. Don't start reducing your prices until you know that your costs warrant it, but when your costs warrant it, you must reduce your prices to keep up the consumption, and you must keep up the consumption.

Furthermore, you are not entitled to any more than a legitimate profit. Therefore, I say every one of you had ought to make it a point right now, this is the time to do it,-be prepared for next spring, install the accounting system, see how it works, keep it working, and install a cost accounting system so that at least at the end of every single month you know exactly what your cost has been. When you have done that you are going to be a better competitor. Furthermore, you are not going to lose your head, because some fellow that has pretty hig gallonage comes along and offers you his business. That is an awful mistake. Manufacturers. plants, and sometimes some hig department stores buy thousands of gallons of ice cream, and not knowing their costs. I have known manufacturers to sell ice cream year after year to such a dealer at way below their own actual cost of production.

Now, as I said before, do that, do it now, install a cost system, know what you are doing at the end of every month, and then reduce your price to the dealer and compel the dealer to treduce it to the consumer. That is important. I don't know as there is anything else I have to offer you.

Mr. Chapell: Get up and tell us how you make the druggist and the other fellow put his price of brick cream from sixty cents down to forty-five and the price of bulk down from 75 to 60.

Mr. Luick: Simply notify him that the price is going to be so and so. There is no trouble about reducing the price to the consumer by the dealer. If you reduce the price to the dealer in a general way the dealer is going to reduce it to the consumer. I believe that in reducing it to your dealer that it is wise to set such a price. Now some of the boys here say you can not control that, that the dealer is going to sell at whatever price he chooses. I don't quite agree with you on that. He may in some localities, but if you set a certain price on your ice cream, to be sold to the consumer at such and such a price, the dealer pretty quickly falls in line on that, and I don't believe we will have any trouble in that line at all. The greatest trouble you usually lave is that just the same as the manufacturer; one manufacturer has sold to John Smith at the cents under his own price and he binds it out and that we have the cents under that price again. I find frequently the dealers try to undersell each other, and that is a great deal harder to control than the reduction of price; the tirrther reduction is harder to control than the frest reduction is

In our city I have had the hardest time in the world to keep the price up to the point with the dealers instead of being unable to get them to reduce it. There is no trouble on that score. It is a fact that you will have to reduce your price, and I say, don't reduce it until your costs show that you can reduce it, and between you and me I think that your costs will show now that you can reduce it.

Mr. Chapell: Suppose you are furnishing log bricks for 32% cents and your dealer puts up a sign "Forty cents," and you have two other dealers within a couple of blocks who are getting a half dollar for the same bricks. How would you handle that? Would you put the forty cent fellow up or make the other two come down to meet him?

Mr. Luick: That is simple. I don't have to 'tell a question as to how some of them are handling it. In my case I either set that price and that settles it or see that he sets it according to what I know is fair,

or I refuse to sell him. My cost accounting system shows me that the fluctuation of my raw material, principally cream, butter, in fact, is almost the entire barometer on our costs. Did you ever stop to figure how much your cans or such equipment of that kind costs per gallon? If you did you woulld realize that it is such a small part of one cent that finally it has very little to do with your actual cost of production. It has something to do with it of course, but your sugar and your milk products are the big barometer and I want to tell you sugar is down 100 per cent, from what it was some time ago, and it is down at least 25 per cent, from what it was at the lowest point last year, and that is a 25 per cent, reduction on that big item, and your cream, as you all know, is down a considerable percentage. Through my cost accounting system all through the war I found my cost per gallon on manufactures. labor, on entire delivery cost, on entire manufacturings costs and such segregated items as that, fluctuated so little per gallon, that I would not have been warranted in making much raise in the price of ice cream, but when it got down to the matter of butter fat, or milk products and sugar, that is where your jumps went up and down, and that is the thing that determines your actual cost and any of you who are studying your cost system will quickly find out you don't have to wait for the rest of it, just get your gallon cost on milk products and sugar and that is the barometer on the whole business.

Mr. Chapell: What do you allow then on a brick f cream?

Mr. Luick: We are getting a dollar and a haft a gallon. I will tell you right now the next replaction on our part is coming right seon, and it is going to be a ten cent reduction, making it \$1.40, and the dealer is going to sell it at \$5\% a quart, because we are going to advertise it as coming down to fifty cents a quart. We are going to let the public know that we are in line with the general trend of prices. Mr. Chapell: It might get to a dollar and thirty cents a gallon. Then you would advertise a 45 cent retail price?

Mr. Luick: No, I will let the dealer get that difference. I have already made one reduction. Now when it comes to the next one, and I know that the dealer can hand that to the consumer, he is going to hand it to the consumer, and so it is going to go on. When we make another ten cent reduction we are perfectly willing to give it to the dealer. We are not profitters; if we can reduce the price ten error to profitters; if we can reduce the price ten that we can—we are going to do it. If it is only a ten cent reduction we are not going to complet that dealer, by advertising a new price, to hand it on to the public, because he cannot, but when we reduce it sufficiently again for him to be able to hand it on to the public, we are going to do it.

The meeting was adjourned.

The afternoon session was called to order at 2:30, President Thompson presiding. After a few opening remarks the Chairman called on George R. Courtright, Rockford, who read a paper, entitled "The Country Dealer." The paper laid stress on the fact that with some educational work on the part of the manufacturer the country dealer could be made very profitable.

"Return of Empties," was the subject of the next address by C. H. Snow, Bloomington, which was followed by a discussion on this subject.

The Chairman called on L. W. Roszell, Peoria, who delivered an address, entitled "Brick Lee Gream." Mr. Roszell enumerated the advantages of brick ice cream to the dealer and consumer and also gave some of the experiences his firm has had in manufacturing and selling ice cream in package form. It said that seventy per cent. of their annual brick output is sold from the first day of April. This winter business is made possible through persistent advertising, stated Mr. Roszell.

F. W. Holmes, Manteno, spoke on the subject "Some Experiences at Sectional Meetings," relating his experiences in organizing sectional meetings.

"The Packing Problem for the Small City," was the subject of an address delivered by Walter Ward, Kankakee, which was followed by a short discussion.

The Chairman called on John T. Cunningham, Chicago, who spoke on the subject, "Some Gelatine Experiments." Mr. Cunningham related his experiences with the use of gelatine in ice cream, showing some of the facts and fallacies concerning the use of this ingredient in the ice cream mix.

The next subject on the program was "The Milk and Cream Supply for 1921," by John Knobbe.

At the request of the Chairman, Mark Shanks, Chicago, gave a short talk outlining the work of the Chicago Association.

Opening a discussion of the subject, "Which—the Homogenizer, the Viscolizer, or the Emulsifier," the Chairman called on Mr. Barber.

Mr. Barker: I could possibly do much better to let someone who has operated the Viscolizer talk on that subject. Mr. Luick, I believe, has two of them, and I would like to hear from him.

Mr. Luick: I am not here to recommend any particular machine as against any other machine. The Viscolizer of the homogenizer so far as I can see are practically one, performing the same service. I don't know as there is any vital difference in the way they perform the service. I believe I would just as soon use the machine called the homogenizer or the machine called the Viscolizer. I don't believe the emulsifier performs the same service as either the Viscolizer and we have used homogenizer. We are using a Viscolizer and we have used homogenizer, as either by the control of the viscolizer and we have used homogenizers, and they have used homogenizers, and we have used to be used to

While I am up on the floor again I will start something else. I have heard a lot of talk today about the subject of packing ice cream. Now I want to give you a new thought, and incidentally, I want to at the same time make just a little prophecy that I am going to look back to in four or five years from now and see whether I prophesied well. I believe that within five years I will have the greater part of my trucks running, probably less than five years, haven't heard one single word today as to the possibility of progress of the small ice machine. Now you have overlooked something. I think it is going to be one of the biggest steps forward for the ice cream industry. I believe that in less than five years, as I said before, the large end matter and the property of the progress of the will not a fact the large city will be delivering his cream of a truck that is prob-five five that the will not have to pack lee cream.

I took the trouble this fall to take a little auto trip around the state of Wisconsin, and I found among my own state dealers quite a number of the small machines, and there wasn't one but what was doing excellent work, and the owner would not continue in the ice cream business now that he has the effiin the ice cream business now that he has the effi-ciency and pleasure of handling the ice cream husi-ness with the refrigerating machine, if he had to go back to the old way. It is going to make it possible for the city dealer to credit the man that will put in the machine with a certain percentage, and, personally, I would be perfectly willing to do it, to encourage the machine. It will make a much nicer business of the ice cream business. You will be able to handle a lot more product off of one wagon. There are now on the market that have come to my notice not less than half a dozen machines made by a half dozen different manufacturers, and every one of them that I have examined will do the work and do it properly and do it at a saving of money to the owner. the state dealer for instance, that we are shipping to; I have one state dealer who just comes to my mind who receives from us, we will say on an average of probably 200 gallons a week, possibly some-thing more than that during the hot weather. He had one devil of a time getting ice in his town a year ago during the shortage, and he put \$2,800 in a machine—that was a war-time price. This summer he has had no trouble at all, he always had ice He has a storage cabinet in the basement that will take 200 gallons alone; he has been supply-ing some of his competitors with cream, taking care of all of his own cream, and did it without buying and chopping up ice.

Now just stop to think what that is going to mean. It is peculiar that no one seems to think of that. Little machines were sold during war-time prices, at \$500, \$1,100 and \$12,00. But the price of that machine is really earned by a fair-sized dealer inside of one year.

Now, when we get to post-war production and prices on labor come down—and they are coming down—and prices on labor come down—and they are coming down—the bale to blay a little machine to take care of his icc cream box and soda fountain for about \$500, and if he should get a reduction, of we will say a nickel a gallon, from the manufacturer, in my opinion we could nicely give him a nickel a gallon, or something like that anyway, he will carn lack that machine inside of a year, or a year and a half

possibly, and do away with all the slop and the dirt and the mess that the icing up entails, and the manufacturer, in his turn, instead of sending out a wagon that can take care of an average of twenty-four customers; that truck would probably be able to take care of forty or fifty customers. Now I think it is a good thing to encourage that machine and I think it is going to be a great step forward in the ice

cream industry.
The Chairman: On the emulsifier, is Professor

Lamson here.

Prof. Lamson: I would like to have you get the idea that is wrapped up in this subject that I am clearing house of information such as you have here in your annual meeting should embody in it just such in your annual meeting should embody in it just such questions as this. You are men who are looking for information, who are looking for enlightenment, and while I feel just a little bit like being pulled up on the carpet here this afternoon. I do feel that it is a progressive idea to thresh out in your annual meetings, and benefit from the experience of the other fellow, whether that experience is tendered in our favor or whether it tends in the favor of the other man, it is immaterial to me: as I promote this idea, it is a forward step.

Now in regard to discussing a subject like this, it is exceedingly difficult to know just what to say. I wish that I could be a little like one man who got up under somewhat similar circumstances a couple of years ago. He referred to one speaker as "speaking like a mother hubbard—which covered a great deal without disclosing much." And he referred to another speaker who had preceded him as being to another speaker who had preceded him as being like a kimona, "hitting nothing but the high spots, and he then referred to still another one which I believe he thought was like a "shimmy" in that "it stuck close to the subject." Now if I could have my way insaying just what I wanted to say, I would tell you nothing but the naked truth, following out the analogy that this gentleman referred to named, but I hardly think it is appropriate at this time to actually go into the merits of these various machines. You have had, however, from the experience of one of the leaders in the ice cream industry today, has been for a decade-I remember going into his plant with a corps of students from the University of Wisconsin to see the best methods pertaining to ice cream manufacture at that time-referring to Mr. Luick of Milwaukee, and Mr. Luick has classified these two machines the homogenizer and the Vis-colizer, as being practically the same. They tliffer in principle, of course, from the emulsifier, the active principle of which is centritigal force rather than straight pressure as applied in the pressure pump machines or the other machines operating on the same principle, and I think out of farmess we should mention the DeLaval emulsifier as well as the others operating on centrifugal force. You have the pressure pump machine, the centrifugal force machines, and I suppose if we were to sound all of the users of these machines that we would find enthusiastic supporters of each one of them. The main thing that I would like to bring out here is that I believe every ice cream manufacturer today should be equipped with one of these machines, whether it be the one that we manufacture or the one that the other fellow manufactures.

The reason I say that to you is this. The last speaker referred to the extreme fluctuation in the supply of milk and cream. It is one of the most vital things on which your business rests today. I know from my own experience in the ice cream business how I have 'phoned, how I have driven out almost frantically to get a supply of raw ma-terial. Now here is your solution. These machines will all of them with more or less success—we claim good success-make cream for either coffee purposes or whipping cream purposes or ice cream purposes that will relieve you of any anxiety from the stand-

point of supply. What would be more appropriate as a national measure along dairy lines today than to take the great surplus which is today driving down the price of dairy products and convert it into a permanent form so we could use it when we need it? In other words, stabilize the dairy industry. We have processes today which would enable us to powder that milk, cliurn it into butter and keep it in cold storage until the time of scant supply, and at that time you can very easily make not only the milk and cream, but your whole mix from those ingredients as a hase, so I would have the message that I would possibly have spoken individually to you this afternoon be sounded collectively for all of these machines as a means to the end of taking care of the machines as a means to the end of taking care of the surplus to protect us against low prices, and to take care of the supply at the time when you need it most. I thank you very much for the opportunity of saying these words to you.

The Chairman: There is one subject that probably somebody has something on his chest he would like to get off on the subject of taxation for the ensuing year. That refers probably to an anticipated change in the Income Taxes as well as the tax on sodas and cones, etc. If there is anybody that would like to say something about that, we would like to hear from him.

Mr. Loewenstein: I may say a few words in that connection. A year ago, that is, after the enactment of the 1918 Revenue Act which is now in force, the National Association took up with the Revenue De-partment the methods of checking the tax under Section 630, which pertained to the tax of one cent on each sale of ten cents or fraction thereof on ice cream sodas, ice cream, etc., when consumed in, or in proximity to, the place of business where sold. We were informed at that time by representatives of the revenue department that if that tax was impractical and wouldn't work out, the government had to have the tax, and that the experts from the Treasury Department would go before Congress and ask that that tax be placed on the manufacturer of ice cream, based on the probable retail sell-ing price of that ice cream. That would have meant mg price of that ree cream, and would have meant a tax of all the way from thirty to fifty cents a gallon on ice cream. Those prospects didn't look very good and therefore we went along and did all we could not to interfere with that tax, we desired to see it paid by the consumer to the dealer. and in that way the tax wasn't a burden to the manufacturer by curtailed production on account of a heavy tax being placed on the ice cream, because it didn't apply to bulk ice cream.

No doubt there was a lot of business lost in some localities as a result of the cone business, and the ice cream sandwiches, etc., but that business was possibly made up by the ice cream that was bought and brought to the home in bulk, that is, the consumption of bulk ice cream was increased, but lately in certain revenue districts throughout the country the Department has been collecting a tax of fifty record hasn't been kept by the dealer of the tax collected. That is, the Revenue Department has arbitrarily fixed a tax of fifty cents on each gallon of ice cream which they sold, no matter how they sold it or anything else. I talked with Mr. O'Brien, the chief deputy field collector here some time ago on that subject, and he told me that there were some smaller dealers that the reports they were sending in were perfectly ridiculous as to the tax they were collecting, and they had to adopt a method of that kind. I understand it hasn't worked any hardship in the Chicago district, that is, through the Northern Illinois District the Department has been very fair, but there are some revenue districts where the collectors have gone about this thing in a rather crude way, and even where returns were properly made they wouldn't accept the returns, and insisted upon a collection of the tax of fifty cents a gallon on all

the ice cream which they purchased. The result was that dealers are complaining and saying that they are going to quit selling ice cream if that is going to continue. So you see undoubtedly the National Association will have to take that matter up with the Revenue Department and see if it can be remedied or if some methods can be devised to collect the tax without working a hardship on the dealer who is perfectly honest in making a return, and who is making an honest return. Of course Congress is undoubtedly going to do something with the tax Secretary of the Treastry has line around the control of the treastry has line around a control of the problematical, but in any event, the National Association will be on the job before the committees when the matter is up, and the ice cream manufacturers will be proper.

erly represented.

It has been rather hard on some of the dealers where they have come in and said, "You have had so many gallons of ice cream, and you have to pay a tax on the basis of fifty cents a gallon," when the party made a return and they didn't collect any such an amount. Of course in some instances, possibly the government is perfectly right in going after some

of them.

Mr. Sanford: We had one or two instances down in our part of the state, but it was only where some of the fellows were selling fifty, sixty, seventy or one hundred reallons à week, and they made improper returns. In those cases they came to their places and went over them and got the amount they sold. Then they made them pay forty cents a gallon,

Mr. Loewenstein: The government at Washington has requested the collectors to make a collection

of fifty cents a gallon,
Mr. Sanford: I think they got four customers

altogether that had to pay.

Mr. Knobbe: Before you break up the meeting there is a little matter I would like to bring to your attention. For several years we have been talking sanitation and promotion of the ice cream indistry, working along those lines, and we have always talked of a laboratory. Now if the Association will

take up that matter and establish a real laboratory, something that this whole country would be proposed of, if you please, with just a small amount of money, from each one of us, we could establish a resent laboratory to find out what we need to know about milk, cream and ice cream.

I think it is one of the best things that was ever started for the ice cream industry. I would rather pay so much a year for a thing of that kind than anything I know of, I believe it is a big thing, and it is going to do this—it is going to be an insurance on your business.

Mr. Shanks: Was it your idea to advocate the Illinois Association participating in this?

Mr. Knobbe: I would ask the Illinois Association of get in touch with the National. Mr. Martin is President of the National Association, and President of the National Milk Dealers' Association. The National Milk Dealers' have up to the fact that they need a laboratory. Now why have two laboratories? Throw it together, because it is strictly a milk situation, and you gentlemen can get all the data, all that information, whatever they find, and I would just ask one thing.—Acep it strictly for milk

I would like to see that laboratory located either in the State of New York, in a milk district and a cool climate, or in Illinois or Wisconsin or some other dairy state, where they handle milk and work

with it all the year.

The convention was adjourned into a business session at which the following officers were elected: President, G. R. Courtright, Rockford; vice-president, L. W. Roszell, Peoria; secretary, M. Loewensein, Chicago; tressurer, E. L. Joehl, Alton. The Board of Directors including the above officers are: F. W. Holmes, Manteno; G. E. Thompson, Chicago and A. H. Chapell, Chicago. W. A. Schwindeler, Quincy, was elected as Illinois director to the National Association.

It was decided to hold the next convention in Chicago, the time and hotel headquarters to be decided by the Secretary.

Addresses Delivered at the Convention*

Keeping the Plant Up to Standard, by Charles J. Stewart, Decatur Ice Gream Co., Decatur, III.

Keeping the plant up to standard, which is the subject assigned to me, is some job, and I am going to try to tell you how it ought to be done, and not how I do it, but how I would like to do it.

The ice cream industry has prospered in the past three years, the same as all other lines, and you all lave made money, and most of you have had some real cash left over each year, probably for the first time since entering the business. I know that we have, and "ain't it a grand and glorions feeling" to arrive at April first, ready to commence a new season not owing any man a cent, with a few dollars left in which to discount your bills as they come in.

Now I am not throwing any boquets at any of you, or swelling up myself for any part we might have had in this increased profit, for you couldn't help it. Any chump who bought anything in 1918 and 1919 and held it for thirty days or more, saw it increase in value.

Of course, you did have to work a little harder, and with longer hours, but you did it because you were forced to do it. You couldn't get the help,

*Space limitations prevent our publishing in this issue, all of the addresses delivered. Those held over will be published in early issues.—EDITOR.

as your help and my help and everybody's help was on the other side of the pond kicking the pretzels out of the Boche.

Now that we have placed the price of ice cream on a standard where it belongs, let us keep it there and bring our quality and service up to that standard. Let us have better plants, cleaner plants, with a bunch of good, clean intelligent workmen with letter hours and better working conditions.

Let us make our plants show places, and put up a sign and tell the people, our customers, in our advertisements that our places are open to inspection at all hours, and make it worth their while to visit us.

Is there any business on the face of the earth today that manufactures so delicate a product as ours, and is housed as poorly and whose machinery looks as risty, or can you imagine anything that looks as lad to the public as our dilapidated, risty ice cream wagons and trucks? I am not finding fault, as you have done your best with the shortreal season at all.

You have done your best with the profits you have had. But now things have changed and the ice cream industry must come into its own. If you don't do it, your competitor will and you will soon be on the shelf.

An ice cream plant should be immaculate, tidy at

all times. Buildings, calinets, packers, cans. wagons, and trucks should be kept in good repair and painted each year. The inside of our plants should be painted white each winter, our drivers uniformed and furnished with aprons, and should be kept neat and clean.

Before making out your 1921 price list, have an expert cost accountant figure out for you what it really costs to make ice cream and what your overhead really is, what your actual depreciation amounts to, and you will be astonished and you will not be out calling on your trade next spring with pre-war prices or making secret contracts or rebates to leaf are quistomers.

Let each firm live and let live, let each individual keep to his regular customers, let there be no crooked work, let each plant improve its product and service, and there will be no ruthless, business-destroy-

ing price-cutting.

There is need of a re-adjustment of retail prices, as they are too high to insure liberal buying from the public, so when raw materials that you use come back to normal, there can be a proper price made to the dealer, which will give him a liberal profit and still not be prohibitive to the consumer, but that price should never fall below a 50 per cent, advance over pre-war prices. I will not reduce my whole-sale price until there is some understanding with the retailer about his 1921 prices.

In conclusion, I want to say something about our employees and wages. I want a better class of employees than we have had heretofore. On account of our working conditions with long hours and Sundays, and the wages that we paid, we could not command the class that it takes to elevate a lusiness, so I for one want better help and am going to have it, by paying as much or more than the em-

ployer in other lines pays.

We started last year to have our best employees buy homes instead of automobiles, and now nearly all of our married men are living in their own homes, paying out the balance due as monthly rent. Our next step is to sell them stock in our company, letting them pay for same out of their profits and savings.

Let us all get up out of the basements into the sunlight. Let us make our places attractive and keep them spotlessly clean, and we will have done the one thing that will produce confidence in our product and increase the consumption of ice cream.

I have been doing a lot of running around this fall, and I have seen a lot of good plants, some clean plants, but the average is very poor and miserably dirty equipment in bad repair, and paint an unknown quantity.

We can put our business on a high standard, and it must be done if we want to advance and take our place in the world, manufacturing the greatest article of food that is made, the dantiest dish take ever graced the table of king or peasant, or pleased the taste of the aborigine or autocrat.

I say, lets get busy and clean up.

The Country Dealer, by George R. Courtright, of the Allen Ice Cream Co., Rockford

This subject it seems to me, is one of the most interesting which ice cream manufacturers could suggest; especially is this interesting to those of us who are located in cities or towns not large enough for an output which justifies our growing ambition.

We go out into the surrounding towns and we find a class of trade handling ice cream which is quite often full of honesty but based upon Dunn & Bradstreet are not in the A. A. Class as to financial responsibility. These dealers are composed of all sorts as to carelessness and carefulness. We find them usually operating a combination lunch room and confectionery, a country drug store and quite often the general store where almost everything is sold. We have now a customer selling quite to our satisfaction our goods who is also the cross roads blacksmith; so you see they could hardly be called ice cream specialists.

These opportunities of doing business lead us to see a golden opportunity for the manufacturer to do some educational work in putting our country dealer right on how to take care of our product, our equipment (tubes and cans) and his own individual profit which in the end means our gain.

The country dealer in the past has sort of considered our product a luxury, only to be sold on holidays and special occasions and as one man told me a year or so ago he only handled ice cream as an accommodation for his customers. Now that sort of a man needs talking to and he must understand how many of his customers would buy ice cream if he had it on sale at all times. We have such a customer now, and when he was convinced he hecame a good booster and has ice cream on sale every day in the year and his it as a food, not as a celebration.

The country dealer is not always well versed in business methods and is quite apt to neglect paying his ice cream bills until some one calls to collect. You may be discouraging a good account if you do not explain to him how much more business like it is to mail his check in weekly or at such time as he receives and checks up his bill. I say you are apt to discourage him for you have all heard the tragic words when you have gone to collect a good big accumulated ice cream bill, "I am going to cut out ice cream, there is no monoir in it, if there is, where has all the money gone?"

Now, I have spoken of the country dealer as I have found a good many of them. Of course, there are country dealers who are as careful and as prompt as we are ourselves, but the man or woman who resells our product must be helped by the manufacturer and made to feel in handling our goods that it is to his financial interest to push the sales and increase the demand.

Another most important item is the product we make. Our country dealer sells our product to people who usually have a cow and we must make something better than the owner of the cow can produce and sell our product at a price to meet the compectition.

This country dealer has a great many inconveniences connected with handling ice cream, first he has to depend upon express service, which by the way, he pays well for. Then too ice is not always at hand. You remember a year ago last summer how discouraging it was for our country dealer.

Personally, I hope to see the day when the roads will be improved so we can give them repacking service and when that time comes you will see the ice cream consumption double in the country towns, for then they will have a stock every day and the closer co-operation we will get by having our trucks make frequent, even daily visits, will make city dealers out of country merchants.

I am so optimistic about the country dealer and what a merchant we can make of him, I feel like the man who said to one who doubted something leing able to accomplish said, "They didn't know there was a subway in New York until they dug down and found it."

Return of Empties, by C. H. Snow, of the Snow & Palmer Co., Bloomington

This matter of prompt return of empties is more important than I believe any of us realize, until we have stopped long enough to consider it from its various angles.

In a general way, we all know that the cost of the container is more than the value of the product which it carries. With our ice cream selling at \$6.25 for 5 gallons, and a 5 gallon tub and can costing us about \$80.0, it is easy to see that we have only half performed our collection service when the customer has paid his bill and he may still have \$8.00 worth of our equipment in his hands. Thus, we see it is absolutely necessary that we get our empties back, involving as they do even more money than the cream itself. That is one phase of the question only.

The other is the rapidity of return and the effect which this has on the cost of doing business throughout the season.

If we call a tub worth \$8.00, then the interest charge on it is 50c. a year, and the depreciation charge on it will be about \$2.00 per year, or in other words, every tub and can will be an annual expense of \$2.50. In a questionaire which I sent out to a few central Illinois ice cream manufacturers. I asked the question "How many trips per year does a tub make?" Those who had accurate figures answered the question "from 12 to 17." Those who didn't know, ran their estimate as high as 50. The first year in which we were in the ice cream business, our tubs averaged only 7 trips per year. By a fairly satisfactory checking system and follow-up work, we have been able to about double that record.

Now, for the sake of comparison, let's say that tubs will make 10 trips per year. Ten trips will deliver 50 gallons of ice cream. The tub and can has cost us \$2.50, or the depreciation and interest expense has been 5c. per gallon. Now, suppose we are able to double this amount of work and have an average of 20 trips per tub per year. This will deliver 100 gallons of ice cream, and the interest and depreciation cost will be only 21/2c, per gallon; or, in other words, we have cut our ice cream cost 21/2c. per gallon per year. If a tub could be made to work once every week throughout the entire year, it would deliver ice cream at 1c. per gallon. But this is impossible, because of winter idleness of such a large proportion of our tubs; but by looking at the two cases which are practical, we can see that by speeding up the number of trips per year which our tubs make, that we can save from one to three cents per

gallon on the cost of our ice cream, simply by increasing the turn-over. Add to this the saving which proper return of empties would make in the new purchase required, and it is not beyond reason to expect that a reduction in the cost of doing business, from 2 to 5c. per gallon, can be made if the most efficient plaus along this line be adopted. Multiply your gallonage by these figures and we get a reasonably fair estimate of the value of our attention to this item.

Now, the question is "How can we do it?" First, the cooperation of our country dealers is absolutely necessary. The dealer who insists that a dozen or fifteen of our tubs are necessary as an advertisement in front of his place, title realizes that the has a \$100,000 sign board on the sidewalk. The dealer who allows our tubs to accumulate in his back yard, deteriorating in the hot sun in summer; or in the bad weather of winter and spring. Bitle realizes that his delay is building up the cost of ice cream and that he, himself, is paying the price of his own neglect. Concerted action in educating the dealer along these lines should be one of the first steps taken to improve conditions.

Second: The express company's share is no small item in this problem. It is quite generally believed that the express companies delay the return of empty packers to our plants until the most convenient time to themselves. Possibly, the rates on return of empties are based on this delayed service, but personally. I do not believe so. We should have from the express company, either very, very prompt service in handling the empties, or we should have a rate based upon station to station handling and thus leave it to the ice cream manufacturer, himself, to handle the empties from the station to the plant, in which case they would get prompt handling in the busy time. So many of the express companies have fallen down partially, and in some cases, completely, in the pick-up service, that a large majority of ice cream manufacturers have been forced to deliver to the depot practically all of their outgoing shipments. This means a full load one way and an empty load another, which is the most expensive way of handling transportation. Express rates ought to be revised so that they were based on station to station delivery, both of empties and full packers. If this is not done, the express company should be forced through legal action if necessary, to perform the service for which they are being paid, and which they are not now performing to any considerable extent. This is somewhat of a digression from the question in hand, but it is very important, and the two should be linked together in any action that is taken along the line of express service.

Third: An accurate simple system for keeping account of empties is absolutely necessary if any real progress is made along the line of returning empties. I have seen many of these systems and I never yet found any one who was completely satisfied with their method. The most common practice is to have the shipping tag made with a detachable stub on which is entered the number of the tub and the name of the customer. This stub serves as the

original entry and in various manners is carried through some kind of office record whereby the customer is charged with the tub and a record is made, showing where each particular tub has gone. This double record seems to be necessary in order to avoid errors. When tubs are returned, the credit is first made against the tub record and from there to the customer's record. These records are kept in various ways; some in books; some on card records; some in filing systems; and some simply on nails in the wall. All of these are fairly satisfactory and are adapted to local conditions as they prevail, Ail of them require serial numbering of the tubs in large, legible figures and I believe all of them have their faults and at times, errors creep into them, giving the customer a lack of confidence in our methods and giving ourselves considerable dissatisfaction. Yet, until something better is found, these are well worth all the effort they require.

Fourth: Requiring of deposits on certain classes of business is becoming more and more customary and if used judiciously, will save a lot of lost packers among the customers who come to your plant for cream, taking the packers to picnic grounds, into the country or various places where you would probably never see them if some deposit was not required. A small amount is all that is necessary, a dollar being customary. A check or receipt is usually given for the deposit and the deposit is not refunded unless this check is presented.

Fifth: Charging to the customer the actual values of the tubs which have been held out over a reasonable length of time, is a very good way to call their attention to the fact that something is wrong. In the replies to my questionaire, I find that very few manufacturers have ever done this. From my own experience, I can say that in a few case, probably not over three or four, where we had a particularly delinquent customer, that the writing in to his week-by statement of a charge of, say \$35.00 for seven unreturned empty packers long past due, invariably got prompt action from him and would result in most of the delinquent tubs being returned. If any plan of this kind is adopted, the system of checking empties out and in must be very nearly error-proof.

Sixth: A proposition which the gas drum people have used and which ice cream dealers might use to advantage is worth presentation. This is the idea of charging a rental for empties held out over a certain reasonable length of time. This, again could be done only if the checking system was accurate and would also require concerted action the rental charges would ever become anything but charges. Collection would probably be another question.

Seventh: A thing which could be of considerable help in making our checking systems accurate and satisfactory to the customer would be a uniform express and freight receipt which the customer could obtain and forward to the dealer by mail, thus obtaining credit for the return of empties when he had actually turned them over to the Express Company, and avoiding the controversies which arise when we send out a this statement and get a reply

from the dealer to the effect that he has returned all his tubs. Such a uniform express and freight receipt should have a place where the numbers of the tubs should be listed separately so that this information would be carried right along. This is a thing which this Association could devise and get into shapes so that each manufacturer could print his own supply and still have a receipt, to which all dealers would gradualy become accustomed.

This leads up to the question of "What effort can this Association, as a body, put forth along this line, that will be of benefit to its members?" I asked this question of all those to whom I sent my questionaire, and received few responses. I got a suggestion from each of our Mr. Allens. One suggested that we adopt a policy, somewhat similar to that which we have adopted as to credit. In other words, notify each other of dealers who are persistently bad actors in return of tubs and that we protect ourselves along that line. The other suggested that the Association get out a form letter to be distributed by the members to their customers, calling to their attention to the value of a packer, what depreciation amounts to and explain that all these things must go into the cost of making and selling ice cream. Also, that this letter state that if empty tubs were not returned promptly, the members of the Association would be compelled to make a charge for the packages and that if this was done, the customer would have forty or fifty dollars tied up in equipment from which he was getting no return.

DISCUSSION.

The Chairman: Just at this time, and along this line, it probably would be appropriate to call on somebody cless on this question of empty containers the general opinion of the ice cream manufacturer is. We have with us today Mr. Sanford of East St. Louis; I think he is very much interested in this subject, and we would like to hear from him.

Mr. Sanford: I didn't come prepared to talk on this. Mr. Snow has covered the field pretty thoroughly along this line. I talked it over several times with Mr. Lowenstein and also with the President of the Association down in Southern Illinois. We were trying to get this thing arranged the same as the bottlers do, charging a deposit on every tub going out; if it came back we wouldn't have to worry; to handle it the same as the bottlers and the brewers.

The Chairman: Anybody else like to say anything along this line? We have given it quite a little thought and study ourselves. Mr. Steward of Decatur has probably gone into that some too.

Mr. Stevart: I cause add anything to what has already beve said adout the necessity for returning them, but I have an almost fool-proof system which is not of my own origination at all, but originated by the Scalshipt Oyster System. I was a jobber of their oysters for a number of years and got their permission to use it. I have been using it now for about eight years, and there are very few chances for error to creep in. Each tub must have its regular number, and that number must be burned in so that the always has its own individual and the substantial that the sound in the substantial that the substantial tha

number on the tubs. We have found a number of cases where they would be calling off the numbers there might be a wrong number given, but even that is traced up so that each tub carries its own eard, and when they go out the triplicate copy is returned to the young lady, who enters that into a ledger; and we have then, two ways of charging it. For instance, if we are in the midst of a busy season and we find ourselves running short of empties, I ean go to her and ask her where I can get one hundred or two hundred empties within a little while, and inside of ten minutes she can give me the names of those people carrying three or more empties, and I can get in touch with them on the telephone and get them to send them in. The only other mistake that is made, is that when these empties are received, if they are not given the proper credit are received, it they are not given the proper credit for them. That, of course, is a matter that has to be given attention. We ask the shipper to leave the tag on the tub. When the tag goes out the number of the tub is marked in the corner. Our shipping room is in the basement, and if we make a run for one train we have say 25 of vanilla, and 5 chocolate and 2 stransform the basement and if we make a run for one train we have say 25 of vanilla, and 5 chocolate and 2 stransform the basement and a stransform to the same as 5 chocolate and 2 strawberry, the shipping clerk asks the clerk filling the order below to give him the numbers, and then when the stuff comes up he has everything all billed and ready to shoot right ont. The covers of the strawberry and chocolate are simply marked "Strawberry" or "Chocolate," and takes care of that. I have given this a lot of thought, and I have seen it work out, and it will work out with just a very little bit of attention and with very little expense.

The Chairman: Mr. Luick, you are such a practical and large shipper of ice cream, I would like to hear your idea of whether you think it is practical to make a charge on tubs.

Mr. Luick; I wish you would call pn some of the Chicago fellows instead of calling on me. Is it because I am going away from here tonight again and cannot reach you? Mr. Stewarf's plan has been used for a great many years. I do not see an used for a great many years. I do not see an used for a great many years. I do not see an used for a great many years to ask the oyster company of the property of the control of the control of the plan here years ago; they had half a dozen clerks trying to keep track of it. That plan is feasible where you have, as you say, twenty or twenty-five tubs going out per train. I have tried that plan and it doesn't work out in our case. Of course, no matter what plan might be devised. Of course, no matter what plan might be devised, that is perfect. The of company of the plan is the proof of the value of the plan.

I have come to the conclusion that there is absolutely only one thing that will give us a record of the tubs and do it simply and efficiently, and I really hope that I possibly may have it solved in a measure, although I can't very well, and don't pre-tend to, give you any details at this time, because it may go up in the air when I get to trying it for three or six months, but if you can take the dupli-cate tag and make it an absolute fact that that tag comes back with the tub, then we will have that problem solved without any further clerical work. The great trouble that we all have is that we hang the tag on the tuh by some device or other. whether it be a wire or a hook or whatever it may be, and when the tubs get back, out of ninety on the wagon coming back probably seventy or eighty of them have the tags on and the balance of them you have no record at all of where they come from When we can get some device whereby we use the coupon tag, as you use, and attach the coupon side of the tag to the tub, and the other go into a little pocket, then we will have it solved. That is the plan I am using now and I have simply made up my mind that whatever losses we have during the year, due to lack of keeping any other track of it, is simply that much expuses, and they have been more than counteracted by the additional cost of taking care of them with clerical expense. In our case we have 120 or 130 tubs to one train. Telephone calls are coming in up to the last minute, and we really and, actually wouldn't have time to be sure that those numbers that are burned in on the tubs were

gotten correctly.

I have found, in traveling about the country and speaking to other manufacturers who do quite a large shipping business, that they are all in about the same boat, trying to keep track of it in that manner is all right if you are fortunate in having your trains somewhat scattered, that is, at regular intervals. In New York, for instance, they have their trains running all through the night, shipping is practically all done at night. Their plat-form is cleared for the day work, and the trains will go away from eight o'clock in the evening on until six or seven the next morning, and they will be an hour or an hour and a half apart. Our principal trains go away at 7:10, 7:35, 8:10, 8:30 and 9:00, and successive trains will earry 100 to 120 tubs. Therefore, in our case, your plan hash't worked, whereas if you are fortunate enough to have them some little ways apart, so there is probably an hour's difference in train time, your plan would be feasible. The more of that clerical work you have to do naturally the more clerical errors that are liable to creep in, whereas, if we can devise some means of attachment whereby a tag that is torn in two and carries a duplicate number is attached to the tub and we can be sure that the tub comes back with that number attached, then we can be sure of where it came from and who returned it. Mr. Stewart: The tag doesn't necessarily have to

stick to the tub if the number is burned in. We have had probably forty or fifty at a load come back and maybe half of those will have the tags on The man takes what he has and the others don't. and uses the back of one of the tickets or something that is handy and writes the numbers on there. I have seen this thing work out. For instance, many and many a time when I am in the receiving room and many a time when I am in one and a dirty can and see that stuff come in, I catch a dirty can and say, "Who coming through; I go to the girl and say, "Who has that can No. 1287?" In a second she will tell me, and that fellow gets a letter right then and there. A tub comes back with the hottom broken out, and I ask her who has had tob No. 1480, and she can give it to me in a minute. If there is an error in checking in, which sometimes happens, that they will come in and not be credited, it will charge itself when it goes out to the next customer. For the proof of this we take about three inventories a year on tubs, so when the fall comes around, before we commence to check up pretty tight on them, we prove it further before we go out and make a charge for the tubs-and we do make a charge if they are kept out two or three months.

Some Experiences at Sectional Meetings, by F. W. Holmes, of F. M. Wright & Co., Manteno

Your President this morning spoke as if I was the one that instituted the first sectional meeting. Possibly I did. Now, then, in looking back we naturally think, "How did it start?" We think, have thoughts, and so we act. If we have a good thought, let it go out; if we have one that is not good, hold it back. That happened to be, possibly, a good thought,

I recall as I was conferring with our Mr. Ward at Kankakee in 1913 when we got to figuring the costs, the advancing costs, of all the raw products. We found with the over-head expense and the price we were getting for the product at that time we were narrowing down to a very small margin. Something had to be done. So we had to act.

I sent out a letter to my good friends, Mr. Allen and Mr. Rossell, asking them what they thought of ealing a special meeting in central Illinois that we might get at this matter and consider it. They replied, "Well and good; you draft the letter, send us a copy, and we will circulate among our competitors, and you do the same." We circulated that letter and we had a splendid meeting in September, 1913.

The following fall, I made a little address in the old Tayern Inn down at the stock yards and I had a list of different costs of land and capital and help and all of the various costs, and I also spoke of the narrow margin which we were trying to manufacture on at that time. The "Good Scotchman" was the Chairman at that time, and he railroaded me in to be your President. Well, the first thing that I did was to confer with Mr. Lowenstein, our Secretary, and we got out a cost bulletin, and we decided to have three sectional meetings that winter. We went up and down the State of Illinois for three years as a sort of "morale twins," but our message was "better co-operation, honor and honesty amongst your competitors, a better grade of ice cream, and a better price for it." We assumed this attitude, as it were, of being the "morale twins,"formerly the "Two Johns" you know used to claim that they were the two that promoted the industry. We tried to do our part down in the sectional meeting. We have had meetings in Pcoria, Jacksonville, Decatur, Rockford, Chicago, Aurora, Danville and almost all of the larger central points throughout the State of Illinois.

Now, you naturally wonder what are some of the experiences. I will not be able to recall near all of them, but I have a few in mind. I recall one meeting we went down to in January, I think it was in 1917 or 1916, at Centralia. It was a very cold, wet day, raining, and Mr. Lowenstein, and John Newman and myself went down to one of the factories and tried to interest a manufacturer there to try to be at the local meeting that afternoon. But we couldn't get him to come, for some reason or other he wouldn't come up to the meeting. We had a very good meeting at that time. There hadn't been much work done down in Southern Illinois at that time. We had a few loyal men from the South end of the State, especially Mr. Gassman of Olney, but there hadn't been very much work done down there. and that next summer they had an epidemic down there, and that epidemic consisted of cutting prices and lowering quality.

Our good friend Mr. Newman and the good Dr. Klein who was the State Analysis at that time, went down there and took a number of samples, I think they got about forty dealers, and a little while after, in the reports they got, they ran from I up to 4 or 5 per cent. butter fat test, and that was being sounded very thoroughly at that time. Well, these men began to get letters from the department here in Chicago to come up on the carpet and

answer the charges which had been preferred against them, and in Mugust, one Sunday afternoon, one of the hottest that we lind that year, this very man whom we went out to see, and who wouldn't come to the meeting, wired Mr. Lowenstein, and I also got the word, "to come down there and hold a seetional meeting out Sunday afternoon." I didn't go I wished the job on to Mr. Lowenstein. He went down there and held a meeting, and what he said to those fellows that afternoon has never been printed, but after that we got a great deal better cooperation and better quality and better prices in Southern Illinois.

I have had some splendid sectional meetings with the Indiana men too. You remember there was no state in the Union that would make ice cream as cheap a few years ago as the Indiana people. We need to make it for forty cents and quite often some side lines with that. But I think the Illinois people have somewhat belped them. We went over there a number of times, and I want to pay a tribute to one of the men over there, the late John Chamberlain who was President of the Indiana Association. We held a meeting over there one time at the hotel, they treated us royally, we told them what we hotel been trying to do and what the effect was in Illinois. It seems as though after that they began to have more of the sectional meetings.

A little later we held another meeting over in Indianapolis with them along the same line. In Indiana, they have some splendid plans—they have the ice eream men, the butter men, and the milk men, directed under one general Secretary, Mr. Harvey of Indianapolis, and he is doing a wonderfully good work over there.

I recall another meeting that we had up in Northern Illinois a few years ago. We were up there trying to bring about some of the conditions that were needed very much, and we had labored very hard. We had a large attendance at that meeting, and it was almost our train time and Mr. Lowenstein says, "We have got to go back tonight, but it don't seem that we have worked out what we came up here to do." There were six gentlemen who were especially interested in that one particular item that needed adjustment. I said, "Gentlemen, we are going to take our trains back to Chicago in a few minutes, and we cannot stay any longer. We are going to ask you if you six men will sit down here at this table and thresh this matter out, and we will adjourn the meeting." One of them said, "We will do it." Immediately those six men got around that table and we began to get our grips together and our overcoats ready to come back to Chicago, and just as we were going out of the door we said, "Good-Bye," and they said, "It is all fixed." That was what the sectional meeting did.

In conclusion, there is just one other item that I will mention. I was called over to Indiana a few months ago in September, it was very warm, I got a telegram asking me if I could be over there to attend a meeting. I went over. We had a good attendance, and it was just the time when the sugar was declining a little bit, and some of them didn't have much sugar, and possibly some of the raw products were a little bit off, and they just felt "now is the time to crack the price," and so there were a few fellows there who were mighty uneasy. They wanted to let down. We did our part, all we could. There were some loyal men there and they said, "Hold fast; we can not afford to cut this price at this time; we are not making any too much profit," and so we got them to hold fast, and I understand that Indiana, especially Western Indiana, is holding fast to that principle yet.

The Packing Problem for the Small City, by Walter R. Ward, President, Kankakee Ice Cream Co., Kankakee

The packing or receiving problem in the small city is rather a peculiar business as I find that most all manufacturers that are packing or receiving do not follow a set form as the large city mnaufacturer does. Possibly because he hasn't the equipment to handle it in the same way.

I am of the opinion that three-fourths of the small city manufacturers are delivering in tubs of which requires possibly 50 per cent, more mileage than the same business handled from a packing than the same ground each day trying to keep our trade in cream with the tub service and they expect five to ten minutes service during rush season. It appears that each dealer thinks the manufacturer has a special truck at the plant to take care of his particular business.

In the first place a packing route requires a good set of cabinets. A five-gallon single cabinet costs about \$18.00, double-five about \$28.00, three-hole about \$36.000 and four-hole \$42.00. Then we find that one trip per day in most cases will take care of any dealer, the driver makes his route and is finished up waiting for quitting time most every day. Or if the express company forget to call, as they do quite often, you have the drivers to get the evening cream to the station. On the other hand, if you are delivering in tubs your machines are out with their town trade trying to get them fixed up for the night.

By furnishing cabinets and packing the manufacturer has his tubs for shipping business and his cream is delivered in better condition as the ice melts rather faxt, especially when the tubs are not covered as is the case in city delivery.

The dealer should use from 10 to 20 per cent, more cream by having a good stock on hand and not running out during the rush time of a hot summer evening and cussing the manufacturer because he won't furnish delivery service night and day, and possibly end up by calling up the manufacturer and asking him if he won't get out of bed at 10:30 or 11 o'clock and get him out a tub of ice cream. This is quite often the case in a small city where tub service is maintained, as they most always wait till they are on the last gallon before they re-order, because if they carry a tub or two over they will have to invest a little money for ice and salt the next morning.

If it were handled on a packing route the driver to the care of it the next morning and sees that it is in perfect condition, but if the dealer takes care of it himself generally he leaves it to some small boy who packs ivin a half-hazard way. Then when he is ready to use it, generally, if the cream is musy, he tells the customer that is the way the manufactures delivers, it to them

The manufacturer generally gets ten cents extra per gallon for ice cream re-iced over the tub service. We find that it costs about ten cents per gallon in most cases for packing ice cream and in some instances less where ice is manufactured by the ice cream company, so it appears that the ten cents per gallon they receive is readily consumed, but if they use 10 to 20 per cent. more cream which is a very conservative figure and save 50 per cent. In mileage on truck or wagon delivery, it makes quite a difference when you figure it costs from ten to twelve cents per mile for truck delivery.

On the other hand it now requires two telephone operators an hour each to call our trade each evening at 4 P. M. to find out how the trade are fixed for their ice cream for evening, then our truck-drivers get out at 5 P. M. with their loads and in the busy season it is generally 6:30 P. M. or 7 P. M. before they return to the plant after an hour and a half at a break neck speed, quite often to find some dealer has overflooked his stock or sold some customer two quarts more than he expected to sell in bulk and he is all out, while the same driver has been by this particular dealer possibly two or three times with his last load.

Another point in favor of packing is that you can collect about 80 per cent. or more cash at time of delivery. It also enables them to carry more of an assortment of cream, also brick cream, of which is a rather slow seller where the dealer has to carry and pack his own stock.

I believe that the drivers are generally hired on a flat salary for packing route and given a commission on each gallon or brick they sell. When a driver's truck is out of commission he goes to the shop with the truck and helps repair it and loses his commission while in for repairs, which is to his interest to see that his machine is in good condition at all times.

It would possibly be advisable for the small city manufacturer to agree to take care of some trade from April 1 to Sept. 15, as some dealers are not profitable all year around.

Now I believe titat Mr. Roszell, Burt Allen, or possibly some of the other gentlemen present could give you a little more light on this subject, because as they are in larger cities and I think they have been following this plan of re-icing for some time, but as a rule, the smaller manufacturer is not following it out very extensively, and where they are they have a number of different ways of handling.

DISCUSSION.

The Chairman: Mr. Ward has mentioned Burt Allen. Being one of the members of that firm, and Mr. Allen not being here today, I might say that in our experience we have found that packing is very profitable, not only to us, but to the output, in will increase the output, and we think that we can re-pack cheaper than we can send it out in tubs for many reasons, some of which have been mentioned, but I think it is better for all if we would re-pack every single customer we have. Then our goods would be sold to the consumer in better condition, because our own representative would gate care of the ice cream for the customer, and I think this applies in the smaller towns as well as in the cities, where many of them don't own a tub. I

wanted to hear from Mr. Roszell, however. Mr. Roszell: Gentlemen, we got our information and our start on the packing proposition from Mr, Courtright of Rockford. When we got ready to put our packing system in we went up to Rockford and I guess bothered the life out of him for two or three days, and found he was covering the thing pretty well. We have been packing I think this is third year down there, and we never would think of going back to the old system. The thing that impressed me in Mr. Ward's talk was the telephone calls, calling up twice a day and getting their orders, and then later on, fifteen or twenty of them coming in and wanting individual deliveries. expense of individual deliveries is enormous. I really believe that we could have taken it over at the same price and not been anyuning out from the territory around about ten miles out from Peoria, too, with our packing routes. Pekin, the upper river district, East Peoria and North Peoria on our packing routes. We pick up a world of business on those routes that we wouldn't have gotten otherwise, because we wouldn't have

sent those small quantities out special delivery. The argument that we find particularly in the fall of the year, is that question of the profitable and the unprofitable customer. You have to figure that more or less on the basis of gallonage, that you can not always make each individual customer of the profitable that the p

as efficient.

The Chairman: Our customers won't let us go back, I think.

MAKING BRAKE BANDS HOLD

A syringe full of kerosene squirted on the brake bands occasionally will help them grip the radie drum and prevent them slipping when an automobile is brought to a stop, says the agricultural engineering department at Iowa State College. The kerosene has a tendency to dissolve the oily matter on the bands leaving the surface clean. Squeaky brakes may also be remedied by the application of kerosene.

ARKANSAS CONVENTION

A letter just received as this office from E. D Woodburn, Secretary of the Arkansas Ice Cream Manufacturers' Association, announces that their next annual convention will be held at the Hotel Marion, Little Rock, January 25.

HOME TRADE MAKES VOLUME

By C. W. Esmond

"I'm glad to see people go into an ice cream parlor and pay from 15 to 20 cents, plus war tax, for a dish of ice cream or a sundae," recently remarked a progressive Southern ice cream manufacturer; "but it pleases me a great deal more to see them take home a pint or a quart of ice cream to be used as a dessert."

Regarding the carry-home trade this ice cream manufacturer continues:

The money that two people will spend in an ice cream parlor will buy from two to three times as much cream if they buy it in quantity to take home. That means increased volume for me. It means better value for the consumer. And for the dealer, while it doesn't mean as big a profit on a single sale, while it doesn't mean as big a profit on a single sale. It is not the profit of the property of the property of the profit of the profit

I do not mean to disparage the parlor and fountain trade. It is and always will be important. But what we manufacturers want is volume. That is where we make our money—small profits on a large turn-over. What the consumer wants is the best possible value for his money, particularly in these times of financial readjustment.

Therefore I am concentrating every effort on increasing this class of trade through my dealers. I want to make it as common-place to carry home a pound of butter or a dozen eggs. Developing this trade to the limit not only means larger volume at trade to the limit not only means larger volume at the wet and cool weather periods when volume is particularly desired. We manufacturers have ourselves to blame and not the weather or financial conditions if we do not largely increase the sales of our product each succeeding year. If the people of this country can afford to pay \$1,000,000,000 per year for soft drinks, it is a certainty they can and should cream afford to be present amount of ice

PRICE REDUCTIONS REPORTED

Reports from different sections of the country while not showing a general tendency on the part of the manufacturers to reduce the wholesale price of ice cream, nevertheless do show that considerable number of manufacturers have found lowered cost of material warranting a drop of from 10 to 20 cents a gallon in the price of their product. A number of them have not been satisfied to stop at reduction in their prices, but have gone one step further and have succeeded in reducing the retail price. For example, the Breyer Ice Cream Co., of Philadelphia, which recently reduced its price from 33 to 30 cents a quart, first advertised through the local newspapers that the wholesale price of ice cream had been reduced, then prepared signs stating that the retail price of ice cream had been reduced to 50 cents a quart and placed these signs with their dealers suggesting their use.

According to the Breyer Company, the dealers responded more or less readily and the increase in the volume of sales at the new price has paid the dealers the same, if not more profit. As a consequence, the majority of their dealers have also reduced the prices of sodas and sundaes.

MINNESOTA ASSOCIATION MEETS AT MINNEAPOLIS

Problems of Taxation and Credits Among Subjects Discussed at Annual Get-together

A large percentage of the membership was in attendance at the annual convention of the Minnesota-Ice Cream Manufacturers' Association held at the Dyekman Hotel, Minneapolis, on Thursday, Decemher 2. President Claus, Sylvester, Little Falls, was unable to be present; likewise Vice-President A. L. Goss. Minneapolis: Treasurer B. R. Paue presided.

After routine business of the Association was finished the Chairman called on A. M. Goodrieh, Deputy Collector Internal Revenue, Minneapolis, who explained the Revenue Law as it applies to the ice ream business. After reading the law, he said that the Internal Revenue Commissioner, with the approval of the Secretary of the Treasury, makes rulings for enforcing this law, such ruling having the force and effect of law.

Most revenue measures impose a tax on the manufacturers and dealers, but the ice cream tax is on the consumer and the retailer becomes the tax collector for the government and makes his report to the deputy in his territory, explained Mr. Goodrich. Ile said that there is considerable misunderstanding of the phrase in the law. "Smillar place of business."

Answering the question, "In case records have not been kept by the retailer how is the tax to be collected," Mr. Goodrieh said that in such a case the collector goes to the wholesaler and gets his records and the collector is authorized to make estimates according to the location of the dealer. The general railing, he said, was to estimate that 25 per cent. of the ice cream is sold in bulk and the tax collected on the remainder at 50 cents per gallon. According to Mr. Goodrich the retailer is not required to keep a record of bulk sales.

Answering the question, "Is a grocer who sells most of his ice cream in bulk and who also sells ice cream cones, taxable?" Mr. Goodrich said that the department first ruled that cones carried away from the premises need not be taxed, but this ruling was later changed so that all ice 'cream cones must bear the government tax.

The discussion brought out the fact that the prevailing uncertainty was hurting business, some dealers being scared of heavy fines, were even going out of business.

At the suggestion of Secretary Paulson, Mr. Goodrich stated that no doubt a conference could be arranged at which manufacturers of ice cream and the deputy collectors from all over the state could meet and come to an understanding about interpretations to be made in collecting the taxes in the future. He suggested that the convention appoint a committee to confer with the Collector of Internal Revenue, if a decision is made to ask for such a conference.

Professor R. M. Washburn was the next speaker on the program. The main portion of the Professor's talk was devoted to the food value of ice cream and its value as a means of advertising. He

attributes much of the increase in consumption of ice cream to improved quality.

The morning session was then adjourned,

W. C. Hawkins, Secty, Treas, of the Minneapolis Association of Credit Men, opened the afternoon program reading a paper entitled, "Credits." Mr. Hawkin's address follows:

I appreciate the fact that I have been asked to adrespective the fact that I have been asked to address you because of my official connection with the Minnespolis Association of Credit Men, as its Secretary-Treasurer. Now, I suppose one would naturally think that an officer in a Credit Men's Association would be an authority on the subject of Credits, but most any secretary knows that he is honored with the job, not because of his great wisdom, but usually because somebody has got to do the work and he has allowed himself to become the However, seriously, I am proud to be congoat. However, scriously, I am product the Con-nected in an official capacity with such an organiza-tion—one of over a hundred branches of the Nation-al Association of Credit Men which, it may surprise some to learn, is the largest Commercial organization in the world, with a membership of about 35,000, and has been and is a large factor in the building of better business practices. It is an army arrayed to give battle to that army of business failures with its annual money loss alone of nearly a quarter of a billion dollars, to say nothing of the human wrecks it leaves in its wake. As long as incompetent men with insufficient capital or with insufficient morals engage in business, failures will be with us, but the organization of which I am a representative, can and does each year make it harder for the incompetent and dishonest to take their toll and easier and safer for the lionest and competent to succeed.

For several years past, during the period of rising prices, with the inevitable prosperity attendant to such a condition, the subject of credits and collection has appeared of minor importance in most lines of business, for the reason that failures were very small and collections good. In fact it required no great amount of ability to make money under the conditions which nevalide.

quired to great amount of aining to make money under the conditions which prevailed, now going through a very critical period from a mercantile receilt standpoint, especially in this territory, requiring the best thought and judgment of the credit manager. Many merchants can see no way to turn to meet his problems. When ordinarily he should be buildaring his debts, he cannot because the farmer lass not started the dollar and the banks have few dollars to loosen up. So we have our own local downward swing or adjustment period throughout the whole work or adjustment period throughout the whole work or adjustment period throughout

That this adjustment period is on the whole a healthy movement—certainly inevitable—no one doubts, and this period or condition will weed out the inelficient and dishonest business man. Business failures are increasing from month to month. That is why today the subject of credit and collections homs up with greater importance.

"We will take a chance," is no longer heard, "Safety first," must be the slogan now. I am a firm believer in prompt collections. It is a large factor in the success of a wholesale or manufacturing business. The company that I am connected with has depended on it for its successful growth.

In my opinion, the man that doesn't owe you is your best customer. Why? Because, if he is one who is habitually slow, he is going to send his order to the one to whom he owes no money. I think many business men lose sight of this fact. Some, in

fact many, especially retailers, seem to think that they make a good customer by being lenient-if I am good to him and not press him, he will like me and I will get all his business. He will for a time, but what good is the trade without the pay

Gentlemen, it is the pet account that sticks you. We all know it and in spite of getting burned every now and then, we do not seem to learn. We always think this fellow is going to be an exception, but he seldom is. Mark my word—there is going to be trouble sooner or later with the man who is

habitually slow.

It takes back-bone to insist on payment in accord-

ance with terms, but it spells success. I will repeat that the customer who doesn't owe

ou, if he owes the other fellow, is seven out of ten times going to send you the next order.

In, a general way, it is a theory that the length oi In a general way, it is a theory that the ordinarily required to turn a commodity governs the credit time extended by the seller. Thus if you buy a house, you get five years or so. Furniture which is a non-consumable commodity, carries with it longer terms than does the paper that my house sells to wrap the furniture in, etc. When you get down to foodstuffs, the time shortens and the more perishable it is, the shorter the terms. Meat bills, I understand, must be paid weekly, likewise fruit and produce, and rightly so. One would hardly expect a wholesaler to extend sixty days' time on bananas that are sold by the retailer within a few days after purchase and consumed at once. Economically it won't work. I can think of nothing more perishable than ice cream and I am not therefore greatly surprised to learn that ice cream manufacturers in Minneapolis sell to local trade on C. O. D. terms. While in ordinary mercantile lines, thirty days is considered short time, I can hardly conceive of any one selling ice cream on such terms except of course, exceptional cases for the convenience of a large department store or something of that sort.

I would classify the ice cream business as the smallest circle or shortest line between production and consumption. It seems to me that if you are not consumption. It seems to me that if you are not getting your money within a day or two after your customer sells the ice cream that your terms are not correctly based. I would say that you should at least expect to get the packer back as soon as empty, with the money for the ice cream therein, figuratively speaking, of course. Maybe you are all getting your money before the top is off the freezer, as they do in Minneapolis, I don't know. I think it is liberal credit at that to some, for a commodity as perishable as ice cream,

imagine in your business you have little more than the ordinary temptation to "Take a chance that many of your customers are what we call "Lightweight" so that if credit is extended you stand to take many small losses, and of course they always want it rush. These problems most of you have no doubt met probably with the C. O. D. stamp.

The National Association of Credit Men was organized some twenty-five years ago for the purpose of bettering conditions under which wholesale credits were extended, to exchange ledger experience and to foster laws for protection against the dishonest debtor. Very great progress has been made during that time

In the old days, no one thought of enquiring of one's competitor for information bearing on the paying reputation of a mutual customer. Today, in most lines of business, exchange of credit information is most free and reliable. Between the credit departments of four wholesale paper houses in Minneapolis. there is the utmost freedom in this respect. In fact, today a printer in Minneapolis, if he does not pay each house by the 15th of the month following purchase, goes on a C. O. D. basis with all of the houses until all are paid. Surprising as it may seem, this arrangement was put into effect at the request

of the Printers' organization and has been a considerable factor in bringing this line of business, from a credit standpoint, from a poor risk to a first class one.

In former years, it was possible and happened every once in a while, for a customer to buy of one house until his credit was exhausted and then start with the next house and so on with two, three and sometimes four houses. They were not business men. They were giving away their commodity through ignorance and we traid the bill.

The Minneapolis Association of Credit Men, which is a branch of the National Association, publishes every week a list of names reported by its members, giving under a cipher key reasons for reporting. Only unfavorable information is so reported. if I place an account for collection with an attorney. or refuse to extend credit to a customer for a reason, and so report it, my competitor or any one else if a member, will have a guide to go by in his dealings with the customer. Many losses are avoided in this way.

The Minneapolis and St. Paul Associations also conduct an Interchange Bureau, the Northwestern Jobbers' Credit Bureau, a membership in which enables one to make inquiries on their customers, receiving ledger information from all members selling a customer, that is-what he owes, how much past due, and how he pays. This you see gives actual experience of others and are not opinions. I might say that all those contributing their experience to these reports also receive a copy of the report. Some members in that way receive hundreds of reports on their customers without themselves making many inquiries

These are some of the things that have been done to enable the credit grantor to "know" rather than guess or rely on opinions of others. And anything that compels the observance of sales' terms is contributing to the success of the merchant. Credit has been and is still too cheap-too easy to get. Many of us credit grantors need to stiffen our backbonesnot only for our own good, but for the good of the customer as well. Many a merchant has laid disaster to the cheapness of credit.

I do not know how much importance your Assoiation gives to this phase of your business, but I do believe that as an association, cooperating with full confidence in each other, you can improve conditions bearing on the problem of credits and collections.

The Chairman called on Secretary N. Lowenstein of the National Association, who reviewed the work of the National Association, calling attention to the work outline by several committees which were appointed at the last annual convention. He emphasized the need of the laboratory which the Association plans to establish in cooperation with the International Milk Dealers' Association.

The speaker dealt at length on the question of express rates and the kind of service rendered to the industry by the express company. Being granted a raise of 26 per cent, and the basis for fixing the charge being raised from 100 pounds to 115 pounds on a 5-gallon packer, the express company also asked for an advance in the rate for returning empty packers. Mr. Loewenstein showed how the National Association fought these requests and succeeded in keeping the old rate; ice cream packers and banana crates being the only "emptics" carried at the old rate. He said this one effort of the National Association, through its officers, saved over \$400,000 for the industry this year.

Mr. Loewenstein concluded his talk by congratulat-

ing the Minnesota ice cream men on the progress they are making, and asked for their continued cooperation and support in his work.

The meeting was adjourned to its regular business meeting at which the following officers were elected:

President, J. E. Woolsey, Minneapolis, . Vice-President, Wilebald Eibner, New Ulm.

Treasurer, B. R. Page, Minneapolis.

Secretary, W. M. Paulson, Minneapolis.

The directors are: Robert Rasmussen, Mankato; C. E. Kester, Hutchinson and Mr. Kiewel, Little Falls.

The annual banquet was held that evening, the entertainment being furnished by the local manufacturers.

DAIRY COUNCIL MEETS

The annual meeting of the National Dairy Council was held in Chicago, December 2, 1920, at which time a very large representation of all branches of the dairy industry was in attendance. A very excellent program was given and much enthusiasm created for the development of the National and State Dairy Council work.

In addition to the comprehensive report of the President, Walter J. Sears, President of the National Canners' Association, gave a most excellent address on the value of co-operative publicity, outlining the wonderful results which have been achieved by various other industries which have resorted to co-operative publicity, and outlining to some extent the comprehensive work which is now being conducted by the National Canners' Association of America.

An address was also given by H. C. Campbell, in charge of educational work, Portland Cement Association. Mr. Campbell outlined in a very interesting manner the advantages of co-operation withins. All industries. He stated that it mattered not whether the industry handled a food product or some other commodity, that it was a proven fact that cooperative publicity was very necessary to the success of that industry.

Frank O. Lowden, Governor of Illinois, was also in attendance and gave a very inspiring talk, emphasizing the importance of co-operation and getting together at this critical time in the world's history. Governor Lowden stated that the dairymen must unite and so tell their story as to let the public know the facts regarding dairy products, because of the importance of these vital foods to human and national welfare.

Governor Lowden stated that through organizations such as the National Dairy Council and the Farm Bureau, he looked to see the problem of marketing largely solved.

It was the decision of all present that the Board of Directors of the National Dairy Council should be increased to thirty-five members, so as to include representatives of the various State Dairy Council as they adopt the plan of the National Dairy Council and as new councils are organized. Representatives from seven State Dairy Councils, whose names

were proposed by their respective councils, were elected on the Board.

The following were elected as the Board of Directors: W. C. Davis, E. W. Chandler, C. M. Burdette, S. J. Van Kuren, W. S. Moscrip, W. A. Wentworth, S. H. Greene, A. T. McClintock, H. W. Wendt, W. P. B. Lockwood, J. J. Farrell, D. D. Airken, C. L. Hill, Milo D. Campbell, James Watson, M. D. Munn, T. H. McInnerney, E. B. Lewis, W. A. West, John Le Feber, William Wanzer, H. S. Johnson, J. A. Walker, Go. P. Grout, W. A. McKerrow, H. E. Van Norman, E. S. Brigham, H. G. Van Pelt, and C. F. Jenkins.

The following were elected to serve as the Executive Committee of the National Dairy Council: D. D. Aitken, H. S. Johnson, W. C. Davis, H. G. Van Pelt, T. H. McInnerney, C. M. Burdette, John Le Feber, M. D. Munn, J. A. Walker.

A Budget Committee consisting of the following was elected: H. S. Johnson, W. C. Davis, S. J. Van Kuren, D. D. Aitken, M. D. Munn (ex officio), John Le Feber, T. H. McInnerney.

The officers elected were: President, M. D. Munn; vice-president, J. A. Walker; treasurer, H. S. Johnson; asst. treasurer, C. T. Mays; secretary, M. O. Maughan.

The work of the National Dairy Council is progressing rapidly, added financial support coming each day from the various branches of this great industry.

The Treasurer's report for the ten months ending October 31 was read. The fiscal year of the Council ends December 31, and the Treasurer reported that a final report covering the entire year would be issued and published shortly after December 31.

The ten months' report shows the following:

Income Account \$65,104.19 Milk Producers \$6.472.00 Butter Manufacturers 22,748.28 10.00	,
55,104.19	

Every man engaged in this industry should begin today to financially support either his state or National Dairy Council. By writing your State Dairy Council or the National Dairy Council you can get full information regarding membership. —National Dairy Council.

Leaving a Balance to Income Account.......\$3,941.48

The decisions as to when payment is due under a contract to render services, silent as to the time of payment, are collated in the note appended to this case in 2 A.L.R. 519.

SOUTHERN ASSOCIATION'S EIGHTH ANNUAL CONVENTION

Ice Cream Men Hold Business and Social Sessions in Three-day Gathering at Macon, Ga.

The first session of the eighth annual convention of the Southern Association of Ice Cream Manufacturers was called to order at 2 P. M., Tuesday, December 7, 1920, in the Dempsey Hotel, Macon, Ga., by President A. M. Thornton, Shrevport, La.

After a few opening remarks, the President called on Glenn Poole, Mayor of Macon, who, in a short talk, welcomed the ice cream men to Macon. W. M. Sidebottom, Nashville, Tenn., responded.

J. W. Clopton, Decatur, Ala., Secretary-Treasurer of the Association, reported as follows:

I have not prepared a very long report; I dou't think it is necessary. Since assuming this office I have sent so many letters out of my office that my stenographer told me when I was leaving home the other day to come here that she hoped some one else would get this joh next year. However I have enevery man who was interseted in the Association. I have tried to give you the services warranted and trust that I have proven satisfactory to you. I have not spared expenses as we have heretofore, because it was impossible to do this; on the other hand, I have spent the money of the Association to I wish to make the following report. Our receipts were as follows:

Membership dues amounting to		1,653.05
With additional dues of		540.18 20.00
Other disbursements of		\$60.18 140.15
Leaving a total balance in the bank Dec. 4,	5	420.03

I have collected here today something like \$200.00. I have not had time to check it up yet, but I will check it up and attach it to my report a little later on. I hope in carrying out my duties as I saw them I have carried them out to the entire satisfaction of the members of the Association. I fin of I want you to say so and I will see what can be done. I feel that you should get service. I felt like the Southern Assn. of Ice Cream Manufacturers was to give service to its members. I wanted to give you the service that would count. I hardly think it is necessary to go into this report any further. There is only one thing I have to add to my report. You will notice that since our hast meeting we have added 62 members—I don't mean renewals—I mean new members to our roster.

It was moved and seconded and duly carried that Mr. Clopton's report be accepted, after which the President appointed the following auditing committee: R. W. Freyerschmidt, Thomas Stuart and W. M. Sidebottom.

In a report on the National Convention, W. W. Campbell, Shreveport, La., made an urgent request that every member of the Southern Association join the National Association.

The President read his address as follows:

It gives me much pleasure to be with you and to look into your smiling faces. There is a great satisfaction in being able to meet with my fellow manufacturers again and I have looked forward in great anticipation to this joyful time. We all work hard throughout our season and we deserve to have a few days of relaxation and I hope each and every one will lay all business cares aside and enter into the spirit of this convention wholebeartedly. It is true that we have some labor to perform which business. It is really a labor of love and what we do here is entirely in the interest of our brother manufacturer. Friends, when I think back to the time of the inception of this Association and see in my memory the few faces, I can hardly realize the magnificent growth we have enjoyed. It fills my heart with pride to think that I was one of the few who helped to build this grand organization. I imagine that my pride could be compared with that of a found great honor among men. I assure you that the other charter members of this Association feel the same as I do and we all deeply appreciate the assistance cach new member has given us. I will let our secretary tell you in his report of the progress we have made.

Fellow members, this should be the most valuable of any meeting we have ever had. We are passing through a period of readjustment and it behooves us to watch our business closely. There is a general tendency toward lower prices, but we must all remember that we were a long time in bringing our prices to the present level; and they, in a great many instances, have never been as high as they should have been compared to the cost of raw materials, equipment and labor. Never in the history of the ice cream industry has the loss and depreciation of cupiment been so great as during the past two years. In a great many instances we have been compelled to pay almost exorbitant prices for inferior grades of equipment, and we do not blame the supply men for this, they did their best for us, but the fact still remains that we have been rous loss. While I am on this subject let me remaind terials, labor and equipment which were in most instances hower than or the present time.

stances lower than at the present time. We come here to listen to discussions, to hear of new methods and to get in closer personal contact with our own fellows. It is really a short course in manufacturing efficiency, therefore let us make the most of every meeting. Our program, is well worth your time and I entreat you to listen attended to abord something that is of vital interest to you and which will mean many dollars more profit for you in the future.

It is a source of great satisfaction to see so many supply men present. This Association is much in-debted to the supply men. I am frank in saying that our Association would not have been a success had it not been for your broad-mimded, big-hearted, enthusiastic big boys. You have always been the very life of our meetings and you never leave anywelfare of this Association. In behalf of the ice cream manufacturers I extend to you our thanks and assure you of our appreciation.

I wish to call special attention to our secretary and to thank him personally and in behalf of the entire membership for the very efficient manner in which he has handled the affairs of this Association. Mr. Clopton has done his work promptly, aggressively and thoroughly. Nothing has been too much trouble, no journey too long or weather too inclement to interfere with his enthusiasm or to keep him from go interfere with his enthusiasm or to keep him from go to the aid of members of this Association. Fellow the companion of the sound of the sound

In conclusion let me impress on you that your membership in this Association is more important to you now than ever before. In the face of present conditions we need to counsel wisely and often; our industry has made such rapid growth that a number of us have perhaps become a first cardeas, learn to properly appreciate the great and everlasting benefits of our Association slogan—co-operation.

The Secretary read a number of communications including the following telegram from Frank B. Webster, Secty.-Treas. of the Texas Ice Cream Manufacturers' Association:

Waeo, Texas, December 4, 1920. A. M. Thornton, care, Shreveport Lec Team Co., Shreveport, La: The following resolutions were minaminously adopted by the Texas lee Cream Manniacturers, Association: "He it resolved that the Texas Ice Cream Manniacturers' Association goo in record as opposing the use of cocanut oil, olcomargarine, or any lats other than milk fats in the manufacturer of ice cream as such practices are directly in opposition to all State and National Laws. The Texas Association will put forth its best efforts to maintain ice resolved that a cony of these resolutions be sent to the Texas Food and Dairy Commissioner, the National Food and Dairy Commissioner, and the secretaries of each and every ice eream manufacturing association.

(Signed) FRANK B. WARNERS, Secty-Treas, The President: Gentlemen, I think this Association ought to take similar action in this matter. If any one would like to discuss the matter I would like to hear from them. If not I would like a motion made similar to that one made by the Texas to make a manufacture of the matter of the to say any I is there any one here who would like to say any I is there any one here who would like to say any I is the case of the motion is made?

No discussion being made, the motion to adopt the following resolution was made and seconded and the motion carried by a unanimous rising vote:

Be IT RESOLVED, That the Southern Association of lee Cream Manufacturers go on record as opposing the use of cocoamt oil, oleomargarine or any fats other than milk fats in the manufacture of ice cream, as such practices are directly in opposition to all State and National Laws. The Southern Association State and National Laws. The Southern Association of the Communication of the Southern Southern Southern efforts to maintain ice cream as a distinctly dairy product.

BE IT FURTHER RESOLVED. That a copy of these resolutions be sent to the National Food & Dairy Commissioner and to the secretaries of each and every ice cream manufacturing association.

The meeting was adjourned.

Wednesday morning's program was opened with an address by W. W. Campbell, Shreveport, La., entitled, "Advisability of Deposit System on Ice Cream Carriers."

W. H. Diff II, Pitisburg, Pa., spoke on the subject, "Sales Promotion." Mr. Duff showed how in history salesmanship had been an important factor to the progress of the world and he clearly demonstrated its importance to the snecessful management of an ice cream business.

"Proper Methods of Collecting Federal Revenue Taxes on Ice Cream from Retail Dailers" was the subject of an address by E. R. Harris, New Orleans, La., which was followed by a discussion on this subject.

R. W. Barnes, Selma, Ala., read a paper entitled, "Future Milk Production of the South,"

The President called on H. B. Wilkerson, Nashville, Tenn., who gave a short talk on the butter produced in the South. He said:

It is certainly a pleasure to have the opportunity and privilege of being with you and my impression is that the Southern Association of Ice Cream Manacturers is the greatest in the South. I thank you for your arguments regarding taxes. Perhaps the model creameries of the dairy industry of the South have located around Nashville. About two years, or probably two and a half years ago, we manufactured about one-quarter of a million pounds of butter; for the year 1920 we have manufactured more than three million pounds; so you can readily ease the development in the South, and I am sure see the development in the South, and I am sure dustry as well as the ice cream industry, if we would work together and become closer affiliated. Your success depends on our success, and now is the time to get every available shoulder to the whete.

I recently heard a fittle remark that impressed mevery greatly, and that was that the Austrian Government had instructed the purchasing power of their government to buy every possible dollar's worth of stuff they needed in their own country, for if they purchased from the United States, we would get the dollars and they would get the product, and where they buy in their own country, they would get the dollars as well as keep their own products. The sagne condition exists in the South. I think if we support the same constituence of the south of the same condition of the same condition of the south. I think if we suppose the same condition of the south of the same condition of the same conditions of the same

Roberts Everett, Secretary-Manager of the Association of Icc Cream Snpply Men, New York, N. Y., at the request of the President addressed the Association on the work of the Supply Men's Association. He showed the value of the Fair Practice Code laying special stress for the necessity of living up to Rule No. 14 of the Code which reads as follows:

Any wilful misrepresentation as to market conditions or supply, either as to finished products or raw materials, tending to induce buyers to overbuy their requirements or contract for future deliveries to their plain loss or disadvantage.

The President: I thank you very much for that address. This Fair Practices Code of the Association of Ice Cream Supply Men is certainly a grand thing, and I think this Association could go on record as endorsing this code to show the boys that we appreciate the things that they are doing for us.

Mr. Clopton made a motion, seconded by Mr. Kent, to endorse this Fair Practices Code of the Association of Ice Cream Supply Men.

The motion was unanimously earried, after which the meeting was adjourned,

The Thursday morning meeting was called to order at 10:00 A. M. by the President who requested the Secretary to read a number of telegrams from other associations extending greetings to the Southern Association.

P. A. Methvin, Macon, Ga., opened th program with an address entitled, "Necessity for Compulsory Pasteurization," which was followed by a discussion of the subject.

The next number of the program was the subject, "Successful Check System of Return of Empties,"

which was to have been delivered by W. H. Flowers, Thomasville, Ga., but in the absence of Mr. Flowers the president requested Mr. Campbell to give them a short talk on the subject. Mr. Campbell said:

This subject of the check system works right in connection with the subject assigned to me yesterday of the advisability of the deposit system. Of course there is going to be some trouble, going to be some disputes with your customers. Go to the train and not one of your packers have been returned. They are going to claim that they de-livered them to the Express Company. There is always going to be some mix up on this and some times you are going to fall out. And with the proper checking system I think this trouble can be elimienecking system I think this trouble can be elimi-nated. I have installed a checking system in my plant which I think is very simple and which I think will work with your plant and is well worth the trouble. First on my ledger sheet, when I charge a man with his ice cream I put down under a column in the ledger the number of the tub. I have every tub numbered. I put right on that man's account the number of that tub. Then in my tub book which carries every tub I have I make an entry of that tub. When the sheets come into the Then in my tub office I turn to this tub account and have "In" and "Out." If you have a tub which goes out on November I that tub ought to be returned to you by November 10. The shipping clerk has as his duty to put down every tub lie ships out and every tub he receives back in. If your tub gets into therbouse without getting onto the books, for instance, you sent out a tub on November 10 and again on November 20 you see that it went out again, You still have it charged on your ledger but that the tub went out on the tenth. It could not have gone out on the twentieth again unless it had been shipped back so you turn to the tub account and credit that tub to the man to whom you shipped it on the tenth, say that takes time. It does take time, but isn't it worth more than the loss of the tub? I think it is and if you will study that system I believe you will is and if you will study that system I believe you will be climinate a lot of that tub trouble; you can turn to your tub account, you can run down that account in a minute and tell just how many cans you have shipped to a man and if you have shipped him abill for \$15,000. He is going to show that he returned those tubs or he is going to have that account to pay.

The meeting was then adjourned to the business meeting at which the following officers were elected:

President, W. M. Sidebottom, Nashville, Tenn.

Vice-President, W. W. Campbell, Shreveport, La. Secretary-Treasurer, J. W. Clopton, Decatur, Ala. The following directors were elected: A. J. Costa, Athens, Ga.; W. E. Drake, Nashville, Tenn.; D. S. Cox, Jr., Columbus, Miss.; F. W. Lange, Ensley, Ala.; J. R. Jones, Little Rock, Ark.; Geo. L. H. White, Ralcigh, N. C.; R. W. Freyerschmidt, Charleston, S. C.; C. A. Kent, Kentwood, La.; M. A. Barrett, Tampa, Fla.; Hargio Hughes, Lexington, Ky.

J. D. Kinnett, Macon, Ga., was elected as director from the Southern Association to the National Association of Ice Cream Manufacturers.

It was decided to hold the 1921 convention in Little Rock, Arkausas

A motion was made by Mr. Odom and seconded by Mr. Costa that no officer except the Secretary and Treasurer hold an office for more than one term in succession. The motion was unanimously carried.

Motion was made by Mr. Sidebottom and seconded by Mr. Kent that a telegram be sent the National Association inviting them to hold their next convention in Dixie. The motion was earried and the following telegram was sent:

Mr. F. R. Martin, Hazlewood Company, Ltd.,

Spokane, Wash.

Southern Association invites National Association to hold 1921 Convention in Dixie and offers full cooperation in campaign for members, which it believes such a convention will stimulate.

(Signed) W. M. Sidebottom.

The convention was adjourned.

On the opening night of the convention the Dixie Flyers entertained the manufacturers at a banquet in the Hotel Dempsey.

The ice cream men were guests of the local ice cream manufacturers at an old-fashioned barbecue held at Central City Park. The guests were conveyed to the park in automobiles and a sightseeing trip followed the larbecue.

Special entertainment was provided for the visiting ladies through the "Official Hostess" working under the auspices of the Tri-State Association of Ice Cream Manufacturers.

The annual banquet of the Southern Association was held Thursday evening, December 9, at the Hotel Deminey.

Addresses Delivered At the Convention

Advisability of Deposit System on Ice Cream Carriers, by W. W. Campbell, of Campbell's Ice Cream Co., Shreveport, La.

No doubt this subject has been much talked on and has been discussed at different meetings as much as any other part of the ice cream business. The deposit system on earriers of the various kinds, is a charge for this carrier, which has been taken up and discussed so many times that there is very little I can say to what has already been said, but there is one thing that I want to bring out. That is the amount these people should be charged as a denosit.

We have the "Cash and Package System," and charge a deposit on cans of 50c. I don't know just what these cans cost. They have what I consider

a pretty good system. They, in our territory, charge 50c to the retailer and deliver the cans to the retailer and they pick them up when empty. They have salesmen go around every day and count these cans when making deliveries and pick up the empty cans, and when they get the cans back they credit the retailer with 50c which was deposited on each can. There can be no loss in that way, and this keeps the ice cream man more in line with what he is doing when he does charge a deposit on his carriers.

The bottlers in our territory make a charge of 300 per case of two dozen bottles on the bottles. I took the matter up with them as to what the cases and bottles cost. What they call "light case" costs 32e, the Jortles cost 72e and a big case costs \$1.75.

Now they only get a 30e deposit on that case. The retailer, when a customer comes to him and wants to buy a bottle of Chero Cola, or what ever it might be says "want to take this bottle home" "All right deposit 5c." The customer carries that bottle home, drinks its contents and sets the bottle down and forgets all about it. The housekeeper throws it out in the trash can. The storekeeper bought that case of hottles for 30e and retails that case of bottles for 72c and is not interested whether the bottles are returned or not because he has made 42c on the bottles.

We charge a man a small deposit on his carrier, whether he takes a 2 gallon carrier of ice cream or a 5 gallon packer of ice cream. If the buyer is out in the country six miles we charge from \$2.00 to \$2.50 on that carrier of ice cream. Now, how much do we make if we get \$2.50 for that nacker of ice cream? We only get 14 of the cost of packer. So, I believe if it is advisable to make a deposit charge on the packer, we ought to charge full value, and if the purchaser is interested enough he will bring them back, and if not he will have it to pay. If you charge every man a deposit, that is the only way it can be done-in order to get full cooperation from that man. We must have the full cooperation of every man in the business. That is the only way we are going to make a success.

Where the question comes up—Is that man going to pay? You have a good customer—Is he going to pay for those tubs and carriers? He might not; he might get a receipt from the Express Company, and in the end when we close up the business for the day we might lave to make a credit, but your loss will not be so great if you have to balance up two or three of these accounts compared with your loss today. And I say, if every manufacturer will cooperate and make a charge for these tubs and cans, this system will work.

Sales Promotion, by W. H. Duff, II, of Barker, Duff & Morris, Pittaburg, Pa.

Gentlemen, I have been invited here to talk about the greatest problem in the ice cream industry. You are going to ask right away, what is the greatest problem of the ice cream industry. It is selling the greatest quantity of ice cream. If I ask you what is your business, you will say "ice cream" business, and then if I would say "what is known as ice cream business," you would say, "making and selling ice cream." That sums up your part of it.

Making ice cream! You do make ice cream, gentlemen, are making it better every year. But you don't sell it, but let it sell itself. All the progress in this world today is due to salesmanship and all the buyers everywhere want to say it's not so.

In 1492 Columbus sold Queen [sabella; sold to her the great lide that there was another world beyond their horizon to which he would earry his expedition; sold her to the extent that she pawned her jewels to give him the money to undertake it. You can thank the salesmanship of Christopher Columbus for our great America. And George Washington sold to the colonies the great idea that this land should be devoted to the pursuit of life and happiness and should be freed from the aggressive rule of the oppressor. And we can thank, George Washington, gentlemen, for the freedom of this great country today.

Then come down to your own life today and take the question of your own business. Some of you are doing a better ice cream business than before, because you have a better plan. You talk of the weather, and you say you have a bad business because the weather has been bad for the ice cream business. Yes, the weather has a great effect on your business, but you are not going to stand or fall on the weather, but on manufacturing and selling ice cream.

This season we have been going up and down this country with conventions on how to better the ice cream conditions. On my way down to your Macon convention 1 met Mr. Patterson and in talking to Mr. Patterson—well it was like this—I asked Mr. Patterson: "Mr. Patterson you make and sell cash registers, what part of the business do you give the most attention to?" He answered, "twenty-five per cent. to the making and seventy-five per cent. to the making and seventy-five per cent.

One day last summer 1 stood on the banks of the St. Lawrence River, and while 1 stood there looking at the grand view and the grand old river, down came the forward end of a great lakes boat being towed by a little tug down to the Atlantic Ocean. I could not believe my eyes. Then the thought came to me, 'yes, a prominent engineer, during the war, conceived the idea of sawing these great boats in two in order to get them through the Welland Canal, and when they got down to the Atlantic Ocean they were again joined together and made into one great ship. Now that is true of your business. There are two parts to it, one-half making and half selling, but to what part of it do yon give the most attenton.

Permit me to say three things that seem to he wrong with the selling end of your business, today. First, the ice cream manufacturer does not have enough salesmen; second, they are not trained; third, the ice cream manufacturer does not go about his advertising in the same fashion that he goes about the rest of his business.

A survey made of a man's business gave me these figures; he delivered 250,000 gallons a year, had 300 dealers and had two salesmen. How often is a man going to call on those 300 dealers in a year? And another thing, your customer likes to have your man call on him. He likes to be told what is going on in the business. He appreciates all this and he likes to hear that the ice cream manufacturer is planning big things for the coming year. In calling on the dealers, a trained salesman tells him what to do in his business-what to push-and there is not a single thing in your dealers stock today, gentlemen, that is a better seller than ice cream. It has the quickest sale in his stock. Ice cream is the greatest silent salesman he has in his store. People stand at the fountain eating an ice cream soda, and they will in all probability buy several things while they are in that store, and you can thank ice cream, gentlemen, for its silent salesmanship.

And take the advertising end of it. So many apparently take a telescope and look through the wrong end of it. The first plan is to pass it to the dealer, and first and last, the best advertiser is the consumer. If a man stands favorably with the consumer he don't need much else. The consumers are the judge and the jury. They will make or break you and you want their favor. An advertising man called on an ice cream manufacturer to sell him some advertising matter, and was told, "no, sir; I am not interested in your proposition at all. I buy hundreds of signs of that sise (pointing to sign) and that is the method of advertising that suits me best.

Now Mr, Manufacturer, you are certainly fortunate in knowing definitely just what advertising is best for you. Trained advertising men will be able to tell you what advertising will help you and will most likely be able to tell you which advertisements will bring in the bacon. It is certain that we don't know which advertisements do the most good. You can not be certain that the plan of advertising you use is the one needed and the very best method.

One man was asked why he used small tin signs advertising ice cream and he said he used them because the dealers liked them. Now wasn't that a cracking good answer. I would say to you that in order to sell the most ice cream you must advertise in every manner that is known to the ice cream manufacturer. The ice cream man will then be prepared for more business. You will agree that only way to do a greater volume of business; making a success of your ice cream business, from making to selling, is just by being "go-getters."

In France when you made a successful attack, the credit was due to the "go-getters" and as expressed by our wonderful poet, "not the greatest victory was due to our army so great, but rather to the everlasting team play of every blooming soul." It is true, gentlemen, that you make and sell ice cream, but if you want to make a really big success you must have team play.

Proper Methods of Collecting Federal Revenue Taxes on Ice Cream from Retail Dealers, by E. R. Harris, of the Harris Ice Cream Co., New Orleans, La.

My subject may be made clearer to some by quoting from the law who are subject ot tax:

Salse of soft drinks, ice cream and similar articles by individuals or organizations, such as religious, educational or charitable societies, on special occasions only, as church festivals, social partics, etc., are not taxable; such sales in stands and booths at agricultural fairs, racing parks, public exhibitions, circuses, shows and similar places are taxable. The distinction is between sales made by a person conducting a place of business, even though temporarily, and merely incidental sales which cannot properly be considered "business," Sales of soft drinks, ice cream and similar articles of food or drink are not taxable when cannot expert the considered substitution of the control of the control

tain are taxable even though sold as a part of a

The latest ruling is that soft drinks and ice cream are taxable if sold by any person or company having a soda fountain in use on the premises, if such refreshments are consumed in or in proximity to such place of business.

The following makes clear how to collect and return the tax:

The tax imposed must be paid by the purchaser to the vendor and the vendor must make return under oath, in duplicate, and pay the tax so collected to the collector of the district in which his principal place of business is located, on or before the last day of each month for the business done during the preceding month. Daily records shall be kept by the proprietors or their agents in charge, showing the number of sales (grouped according to amount of sale) and the tax paid thereon. The daily records of the proprietors or their agents with copies of their monthly returns, shall be kept on file, in the places of business of such proprietors, in such manner as to be readily accessible to investigating internal revenue officers. In case the proprietor of a soda fountain, ice cream parlor or similar place of business does not use an adequate cash register or check system, receptacle shall be used to retain the tax collected by the vendor from the purchaser. Such receptacle shall be so arranged or subdivided into compartments suitable for holding the different amounts of tax collected, in order to facilitate the compilation of the daily and monthly records of tax collection.

The Revenue Department lays special stress upon keeping records of sales and returns for at least two years after sales and reports are made, as the vendor may be called upon at any time within that time to produce such records.

If any point is not made clear in the above, or if anything is omitted, the writer will gladly answer communications addressed to New Orleans.

Now Mr. President, since that is quite an important subject I feel that if you can, give it just a little time for discussion, I believe it will be well, if you will pardon the suggestion.

DISCUSSION.

The President: I think it is a very important thing to do. It is something that has been a rather sore spot with a great many of us, in fact, most of us. I feel like something should be done to remedy this, and I think the National Association has a committee to go before the proper authorities and try to get some relief. We are like children, gentle-us a little talk on it. Mr. Campbell, how about giving us a little talk on it. Mr. Campbell, how about giving us a little tide about what the National Association is doing on the subject.

Mr. Campbell: It is my understanding Mr. President, that the National Association has a committee to go before the next Congress (nothing will be done by this present Congress), to see if we can't get some relief from these heavy taxes on ice cream. Just what they can do remains to be seen, and that is why I made the statement yesterday that the National Association is fighting our battles for us, and that we should give them co-operation at all times. They have got a committee that are spending their time, without a cent of compensation, in Washington, trying to get relief on this matter. And it is a question of deep interest to the manufacturer, especially where we have lots of negroes. We all know the negro is a big consumer of ice cream. He has a stand and naturally he gets mixed up on this revenue, and when the collector comes he gets scared and he quits the business and we lose that much business. I think it would be well for each member of this Association to get in tourch with his representative in Washington and see if he can't get some relief. I would like to make this motion that the different members in the different sections of this country take the matter up with the different reresentatives and get him on our side, and it would

country take the matter of the control of the control of the case of the case

to how and when to pay taxes on fee cream. W. C. Yarbough, Birmingham, Ala.; I think it is probable that this thought has occupied more of us than anything which has come into our business in a year or two. I suppose our experience in Birmingham is about the same as in other localities. I think there should be some concerted action on the part of the ice cream manufacturers. Intangible taxes or taxes paid at the close of the year's business upset the consumer less than laxing the collection of the part of the text of the year's business upset the consumer less than laxing the collection. I have personally talked to Senator Underwood on this subject. Now let's get together and try to straighten this out. Take for instance—the tax on gasoline. We have had to pay that.

Great stress has been laid on the fact that there should be no great tax on food stuffs. Yet we laid stress on the fact that ice cream was a food stuff, but we stood by and let them put a 20 per cent, tax on ice cream. If we get behind our representatives in Congress and use our influence, and if we do in Congress and use our influence, and it we to work in harmony and the proper authority can be reached, we will have some attention. And, as to some other phase of the business—that National Association has such a high membership (ee—thereare worlds of us smaller fellows who would like to co-operate but we can't afford to join the National Association, and it is a sure thing that we cannot sit down and let the National Association fight our sit down and let the National Association ignit our battles. And then right here let me add something else. We have listened to Mr. Campbell's very good talk on the carrier and deposit system, but 1 think that we should have a discussion by the different of gentlemen on these subjects. We should not sit here and let one man block out a program for us to carry out without bringing it up afterwards in a general discussion and we may get the counsel of some man who has different viewpoints which have not occurred to him. I should not have the temerity to offer any particular suggestions, but I believe these questions should be generally discussed as it would bring out a great many different viewpoints and possibly suggestions from many other salesmen and manufacturers. There are just as able men in the ice cream business as there are in any other business. And I am convinced that most every man could add something of value, some experience of his own that would be a help to the balance of ns. I am certainly carrying back some valuable information with me, which will be a great nelp in my business. In this matter of tax on ice cream let's combine our efforts and adopt some plan where we will by our combined efforts, get some action from

Congress, and whereby we can get some uniform

The President: I submit Mr. Campbell's suggestion that each manufacturer take this matter up with his congressional representative from his own particular district and see if this tax cannot be repealed or placed where it should be. We all realize, and I believe the authorities do too, the cost of collecting these taxes as it stands now.

Mr. Campbell: Mr. Tresident, let's offer the motion that a committee be appointed to handle this matter with the next Congress, the present Congress is not going to do anything. I offer a motion that a committee, consisting of such a number as tine President of this Association sees fit, be named to act along these lines.

This motion was made by Mr. Yarbrough and seconded by Mr. Kinnett and duly carried

Future Milk Production of the South, by R. W. Barnes, President, Selma Creamery & Ice Co., Selma, Ala.

The future milk production of the South depends largely on the ability of the dairymen and farmers to market their milk at a profit to near-by creameries; and it is to the interest of the ice creamindustry of the South to encourage this production by confining their purchases of all milk products to the South; for without a home market we cannot expect to see dairying in the Southern states grow and develop at it has in the Northern and Western states.

The beginning we have made toward developing dairying in the South, should be encouraged by every manufacturer who uses dairy products in any form lunging these products from Southerp creameries, who are trying to make a market by manufacturing all the milk produced into products that the ce cream industry requires; for if the creameries succeed, it will be done by marketing these products in the South because we cannot compete with the Northern and Western markets on account of long freight halts.

There are several creameries in the South, where our largest dairy development has been started, who are making considerable progress in putting on the market, milk products equal to those manufactured anywhere in the country, these companies are buying their milk on the same basis that is being paid in the large dairy sections of the North and West, and have invested a large amount of capital to produce a standard product that can be delivered in better condition at the same price, and this should be supported and eucotraged by having their product used to the extent of their outnut.

Dairy in Malama had its birth on the arrival of the holl weevin in 1915 and the progress it has made has been limited only by the market that has furnished to take the milk and eream produced; and I can safely say, will be limited only in its future growth by the ability of the creameries to market their milk in products that will enable the farmers to continue to produce it at a fair profit. The milk production in Central Alabama has increased over 300 per cent, since 1919, and there is every reason to believe that the development will continue at the same rate, if a steady market can be furnished. The Selma Creameries have been largely instrumental in the rapid dairy development in Central Alabama by importing from the North and West, high grade and pure bred dairy cows and bulls and we now have the foundation of some of the very best pure blooded cows and bulls that the country affords and the off-spring of this stock will soon make of Alabama a second Wisconsin, if we can furnish a steady market for this milk. Our farmers are well-pleased with dairying and more of them are buying pure bred dairy cows and will plant more feed crops than they have ever done, which means more milk, as they have realized that it is better to get the semi-monthly check than to wait until the cotton is gathered in the fall and have "Cle Bill Boll Weevil" and the "Bears" to say how much money they are to get for their crops.

Personally, I see nothing but the brightest future for dairying in the South; and especially Central Alabama, if we can give the farmers a market for their milk, which we can do, if the lice cream manufacturers will appreciate and patronize home institutions, which, if done, in a year or two, we will be able to produce every pound of milk the South needs, without going to Northern and Western markets for a product that is grown right at home.

Necessity of Compulsory Pasteurization, by P.A. Nethvin, of the Odom Ice Cream Co., Macon, Ga.

I think pasteurization should be compulsory. Take into consideration the diseased cattle. The dirty manner in which people are trying to produce milk. And when we take all this into consideration we realize why milk should be pasteurized. It will make better milk than that produced without pasteurization. It will make good milk and be passed on to the consumer in that condition. However, I don't mean to say all milk is produced under bad conditions.

We all know that pasteurized milk is better after it is pasteurized than is the raw milk. We have drawn many an argument by that statement. But it has all come about by a man trying to put over something that he could not put over if the milk were correctly pasteurized.

Now as to getting everyone to pasteurize his milk 1 suppose Mr. Kinnett could tell you how hard it is to get them to do this. It is hard to have any law that is not violated. I feel free to state that every state has many laws that some people do violate.

If this organization would get belind the pasteurization movement and try to get a compulsory bill passed we could get it through. You know how hard it will be to get it through. But if a thing is worth while it is worth doing right. I think the best thing for the people to do is to get behind this movement. Insist on the compulsory pasteurization of milk, get the legislature behind the movement, and I am sure that we can get it done.

DISCUSSION

F. B. Stuart, Knoxville, Tenn.: I can say for pasteurization that I think it should be a compulsory act. I have been handling milk for the past

15 years and find that I get better products out of pasternized milk. Another thing, if you can show clarified milk, well clarified milk, comes into your plant and then the milk is pasternized you get better results. It produces one of the finest products to use clarified milk and pasternize the milk for himself. I think it would be a good idea to get our states to pass such a law.

The President: I am glad to have had Mr. Stuart add the word "clarified." I think it is a good thing

C. A. Kent, Kentwood, La.; I handle a good dear of milk and will not let any milk go into my ice eream nuless it is pasteurized. York know of course of the typholi germs. We can examine our cows and even when they are examined, you know that we can get milk from a discased cow and that milk will contain typholi germs. Yon know that there is now a large demand for certified or pasteurized milk. I want to say that I am strongly in favor of pasteurization.

Mr. Sidebotton: I don't think that any one has thought how our milk which is consigned should be landled. I think every dairy in the country should have live steam. I think every town should have a law that milk should be pasteurized. Nashville but we have finally succeeded in getting the state dairy department interested in this. Our next legisalure meets in Jamary and I understand the Milk Distributing Company has a bill prepared to present and we have no doubt but that it will be passed. So our next year in Tennessee will have doubt about it at all.

K. K. Kennedy, Hickory, N. C.; I went into the ice cream business in 1918 and first handled milk from New York. It was very easy to do this lecause the milk came down the Clyde line; took two days on the steamer, and the milk came to its fresh. I learned that the reason we got such good milk from I learned that the reason we got such good milk from pasteurized and put in the properly steamed containers or it could not have come to us in that condition. There is no doubt at all in my mind but that all the milk we use should be pasteurized.

PRACTICAL ENGINEERS MEET

The eleventh annual convention of the National Association of Practical Refrigerating Engineers was held at the Hotel Sherman, Chicago, December 13, 14, 15, 16, 1920. Two business sessions were held each day of the first three, and the fourth day was devoted to visiting, ice making, and cold storace plants, and other points of interest.

The atendance was the largest ever recorded, the total registration exceeding 225. Delegates and visitors were present from all parts of the country from Massachusetts to California, and one visitor from Australia.

The convention was a notable one in many respects. The action of the delegates in voting to hold the next annual meeting in Philadelphia is illustrative of the spirit of expansion and development of the Association into a national organization that will equal in character and munerical strength the older national bodies representing other branches of the engineering profession.

Other features of importance were the adoption by the Association of the standard ton of refrigeration prepared by the joint committee appointed from the A. S. R. E. and the A. S. M. E. The appointment of a committee on standards to take up the subject of standardization of machinery valves, fittings and other articles used in the industry. Several changes were made in the Constitution and By-laws. Or of which changed the wording in Article VIII from "diploma" to "certificate" and a change in the wording at the end of the first sentence of Section I, of Article V, thereby changing that sentence to read, "All members of this Association, either members at large, or members of subordinate Associations, are enjoined from taking part in strikes or disagreements between employees and employers as members of the organization."

The program for the convention had been prepared with much care as to the character of the subject presented, and the speakers were selected for their special knowledge of the topic assigned them. The papers were presented for the purpose of creating discussion, and at the conclusion of each one, lengthy discussions were participated in by all present and in this way the details were brought out.

The morning session of the first day was taken up with addresses of welcome, president's annual address and appointment of Credentials' Committee.

At the afternoon session, following the appointment of committees and reports of committees, the following papers were presented:

"Combustion," by Jos. W. Hays, President Hays School of Combustion.

"Powdered Coal," by Milton W. Arrowood, Executive Engineer, Ground Coal Engineering Co.

Monday evening the members and visitors attended a theatre party.

The morning and afternoon sessions on Tuesday were devoted to the presentation and discussion of the following papers;

"High Speed Compressors," by Thomas C. McKee, Carbondale Machine Company.

"The Present Status of the Two-Stage Ammonia Compressor," by Harry Sloan, Advisory Engineer, Vilter Mfg. Co., Milwaukee, Wisconsin.

"Oil Engines as Applied to Refrigerating Machinery," by J. D. Harper, Manager Oil Engine Division, General Sales Dept., Fairbanks-Morse Co. "The Unaflow Steam Engine," by Robert Cramer,

Chicago.

"Electrical Drive for Ice Making and Refrige

"Electrical Drive for Ice Making and Refrigerating Machines," by William J. Bray, Sales Engineer, General Electric Company.

"Increase in Capacity of Ice Machines by Application of Multiple Effect Compressor," by H. T. Whyte, Supt. of Ice Factories, Consumers Co.

"Absorption Refrigerating Machines," by C. W. Kohler, General Engineer, Booth Fisheries Co.

"Manufacture of Raw Water Ice," by Gilbert Sellers, Chief Engineer, South Chicago Ice Plant.

"Treatment of Water for Raw Water Ice," by W. J. Hughes, International Filter Co.

On Tuesday evening a smoker and entertainment was provided for the members, at which motion pictures of the manufacture of wrought iron pipe and the production of petroleum lubricants were shown. Interspersed with the pictures were several vaudeville

The morning and afternoon sessions on Wednesday were devoted to papers and discussions, the selection of the next city for the annual meeting and the election of officers. The following members were necestred:

"Overhauling and Rehabilitating Plants," by Charles M. Gilbert, President, Midwest Engineering

"Economies in the Ice Making and Refrigerating Plant," by F. C. Pedley, Dubuque, Iowa.

"Standardization of Ammonia Valves and Fittings," by J. E. Porter, Staff Engineer, R. T. Lyons, Engineering Co., Oklahoma City, Oklahoma.

"Municipal Regulation for Refrigerating Machiner? Installation and Operation," by H. G. Johnson, Inspector, Department for the Inspection of Steam Boiler, Steam and Cooling Plants, City of Chicago.

The annual banquet of the Association was held Wednesday evening.

The election of officers resulted as follows: President, C. W. Kohler, Chicago, Ill.; 1st Vice-President, F. L. Brewer, Tulsa, Oklahoma; 2nd Vice-President, J. E. Lawrence, Dallas, Texas; Secretary, Edward H. Fox, Chicago, Ill.; Treasurer, W. R. Itch, Kansas City, Kansas; Sergeant-at-Arms, Roy Noyes, Chanute, Kansas.

Board of Directors: Norman Register, Chairman, Dallas, Texas; A. G. Dean, Philadelphia, Pa.; W. W. Stevens, Los Angeles, California.

Thursday morning was devoted to finishing up business that was left over from the preceding sessions. The meeting finally adjourned at 10:15 and the balance of the day was spent in visiting plants.

—EDWARD H. FOX. Secretary.

WASHINGTON SHORT COURSE

The annual two weeks short course in dairy manufactures will be given by the Dairy Department of the State College of Washington, February 28 to March 11, 1921. This course presents the latest methods of handling cream, and the manufacture of butter, ice cream and cluese. Only men who have had six months' previous experience in a manufacturing plant will be permitted to enroll in this work.

The State College operates a commercial creamery which does a mouthly business of approximately five thousand (\$5,000) dollars. The bulk of the trade is wholesale, although a counter is maintained, over which milk, and milk products are sold.

For further information with reference to this course, write to the Dairy Department, State Collego of Washington, Pullman, Washington.

TRI-STATE POSTPONED

The annual convention of the Tri-State Association of Ice Cream Manufacturers, which was scheduled to meet on December 6, has been postponed to March 8, 1921. The convention will be held in Savanah, Ga.—John S.ANCKEN, SETV.-TREAS,

WEST VIRGINIA HOLDS ANNUAL MEETING AT CHARLESTON

Tenth Annual Convention Most Successful of Any Heretofore

The tenth annual convention of The Ice Cream Manufacturers' Association of West Virginia, held on Dec. 14 and 15, in the assembly-room of the Hotel Ruffner, at Charleston, was the most successful and best attended of any convention heretofore held in West Virginia. The attendance of ice cream manufacturers of the state was almost a complete 100 per cent. registration at headquarters on the initial day of opening, Tuesday, the fourteenth, and several arrived and registered the following day. It was very gratifying to the officers and directors of The Association to have so many present and to note the interest manifested in the discussions and round-table talks.

The round-table talks were interesting and intensive at all times and many questions vital to the industry were discussed and commented upon and it can be said that at this meeting, with just a very few exceptions, all present joined in the discussions. It appears that the delegates were in a happy frame of mind, eager to be enlightened and very enthusisation.

Quite a large number of salesmen and supply-men were in attendance and assisted materially in making the convention work smoothly by reading addresses, joining in the discussions and supplying information gathered from other conventions and travel, that helped to put the mountain state on the map as a convention State well worth attending

The convention was called to order promptly at 1.30 p. m., on Tuesday, Dec. 14, by the President, W. M. B. Sine, who expressed his pleasure at such a magnificent turn-out and gathering of ice cream manufacturers and supply men being in attendance at the opening of the convention and greeted them all heartily.

After roll-call and the noting of the very few absentees, the Secretary was called upon to read the minutes of the last convention which being complied with, they were on motion adopted as read.

The President then proceeded with his annual address as follows:

We have had our little war and its reaction; the Republicans held an election and the reaction that accompanies a campaign; everybody is convinced we have reached the foottom and that things are in for a revival. Everybody is still eating three square meals a day with ice cream for desert. October was the best October most of us have ever known in the business; November this year had twice as many ice cream days as last year and December is going strong.

Do we find hard times largely psychological? Suppose everyone should begin to talk good times and act good times, would they not be that much neare? At the conventions this fall, many of the ice cream manufacturers and supply men felt that right after the first of the year, when 1920 inventions to the first of the year, when 1920 inventions with the properties of the properties of the properties with the properties of the first of the year. When 1920 inventions we have the properties of the properties with the properties of the

Your President represented the Association at the hearing before the Inter-state Commerce Commission in Washington, along with members of the National Association and other State Associations. While the results were not as satisfactory as they could the Express Company gor just about half what they asked. Maybe that was their way of getting what they did.

Your President and Secretary have worked together in keeping up connections between our State Association and National Association and have furnished a good deal of data and information for statistical and legal purposes. Right now they are contesting before the Public Service Commission the request by the Express Co., for an increase in the resolution authorizing the Association to take more vigorous action in this matter would be in order. You will hear more about it later.

I recommend that the Association dues be increased to take care of the increased cost of running the Association. I also, recommend that some good attorney be paid a retainer to look after the affairs of the Association, and further recommend that the Secretary be authorized to get out before the 10th of each month a circular of the happenings and events of the trade and mail to each member; that his pay be increased in accordance with this extra work.

The following committees were appointed by the President:

Auditing: S. B. Haffner, Elkins; H. G. Bradley, Bluefield, and T. J. McCann, Wheeling.

Nominating: C. F. Jamison, Huntington; J. J. Schmidt, Charleston, and F. D. Hummel, McDonald.

After giving his financial report, Secretary Jamison mentioned the enrollment of new members and presented data and evidence that was used before the Interstate Commerce Commission, at Washington, in the protest of the ice cream manufacturers against the arbritary increase in rates proposed by the American Railway Express Co., and the substitution of new classification for the movement of ice cream in interstate shipments.

Treasurer Joe L. Wilson, Huntington, reported receipts of \$399.00 from the Secretary during the year just closing which, together with Treasurer's balance of \$166.05 from previous year, provided a total fund of \$565.05 and that orders amounting to the sum of \$432.63 had been paid by him leaving a balance of \$132.42 at this date, in the Treasurer's hands.

The first number on the program was the subject: "Should a charge be made for tubs and cans?" This was opened by H. G. Bradley, Bluefield, West Va., who proved himself a star in getting bubs returned promptly. Mr. Bradley handled this question in a masterly manner and from his explanation of his system showed the result of much thought and study in enforcing this rule. This question by Mr. Bradley, evoked a great many pro and con cremarks during the discussion and worked itself into a good round table table in which most of the members engaged. It stimulated the idea so thoroughly among the members, that a motion was made looking

towards the appointment of a committee and the adoption of a resolution for disposition of the ques-

The President appointed J. J. Schmidt, Charleston, Joe L. Wilson, Huntington, H. G. Bradley, Blucfield, D. P. Wickline, Mullens, and W. O. Triplett, Grafton, members of this committee to provide ways and means or the submission of a resolution that would care for the suggestion of making a charge for containers.

The next subject for discussion on the program was entitled, "At what temperature are best results obtained when homogenizing the entire mix?" Jas. B. Moore, Baltimore, Md., led the discussion and showed his familiarity with this line of talk as applied to the homogenizer. His discourse drew many new features of this problem from his audience not generally understood by them.

Oliver S. Jordan, President of The Association of Ice Cream Supply Men, of New York, N. Y., addressed the convention upon the subject, "Protection in Buying."

The meeting was then adjourned,

The traditional banquet and supper was served in the dining-room of the Hotel Ruffner, on Tuesday evening, Dec. 14, to over 100 plates. There were many witty talks, music, jazz, several numbers from local theatres and songs by Messrs, Jordan, Confort and Hollwegg, It was an enjoyable occasion and all did real justice to the nice spread of blue-points initiatory to plum-pudding commendators.

The second day of the meeting was called to order by the President at ten A. M., with all available seats comfortably filled.

J. J. Schmidt, Chairman of the Tub and Can Charge Committee, read the following Resolution which had been prepared by his Committee and which was on motion, adopted as read:

RESOLUE: That the Ice Cream Manufacturers' Association of West Virginia, appreciating the importance of the prompt return of empty containers and that any plan that will assure or facilitate their return, will conduce to efficiency and economy in operation, recommend to its members the adoption of a deposit system, and that this Association cooperate with other associations, state and National in formulating a uniform charge or deposit system,

A resolution was also presented by Mr. Schmidt, providing for the appointment of a Committee of three to provide ways and means, raise funds and employ counsel to protest against the increase in estimated weights of ice cream applied for by The American Railway Express Co., from The Public Service Commission of West Va., Messrs, J. J. Schmidt, Charleston, W. M. B. Sine, Clarksburg, and S. B. Haffner, Elkins, were appointed on this Committee.

The Fair Practices Code adopted by The Association of Ice Cream Supply Men, was read to the members assembled in Convention, by the Secretary and after remarks and explanations by Mr. Jordan, this Code was heartily and manimously adopted by the Convention,

L. Cablish, of Charleston, offered a Resolution

which instructed the Secretary to write to each U. S. Senator and Representative in Congress asking each to use their influence and efforts in having the tax on ice cream abolished. This Resolution was, upon motion, adopted as read.

"Getting Back to Earth" was the theme of J. S. Darst, Auditor of State, who addressed the Convention in a very enthusiastic enlightened manner. He pointed out to the Convention the importance of getting back to normal conditions in business, not only this kind of business, hut all businesses, and that the sooner we commenced to have and conserve our energies in industrial relations, use our efforts in getting conditions back to normal and a willingness of each to assume his part of a shrinkage in prices and costs, just so soon would all kinds of business be restored to a good, sound basis.

The address of W. H. Duff, of Pittsburg, entitled, The Ice Cream Manufacturer's Greatest Problem," suggested more cooperation between the manufacturer and dispenser in the way of making ice cream more prominent and attractive to the consumer. The idea is to teach the public the importance of ice cream as a food and appeal direct to the consumer by various means, thus creating a demand for the commodity that would ultimately increase sales.

One of the questions very interesting to the meeting, was one which is called to attention almost daily to those who ship ice cream and that deals with the transportation of the product. In this respect, the Convention was fortunate in having D. W. Burrus, Washington, D. C., a member of the General Superintendent's Staff to address them. Mr. Burrus explained the difficulties the Express Co. was forced to submit to during the war period by reason of a shortage of help, lack of facilities and other causes that were burdensome. He assured the manufacturers that they would get better service and that facilities would be provided just as fast as their means would permit looking towards furnishing the best service obtainable for transportating not only ice cream, but other merchandise as well

The Nominating Committee, reported the selection of the following for Directors for the ensuing year. They were, upon motion, elected:

H. G. Bradley, Bluefield, Joe L. Wilson, Huntington,

W. M. B. Sine, Clarksburg.

S. B. Haffner, Elkins, F. A. Hummel, McDonald,

D. P. Wickline, Mullens, I. H. Cline, Charleston.

The Directors met and elected officers as follows to serve during the next year: President, W. M. B. Sinc, Clarksburg; Vice-President, S. B. Haffner Elkins; Treasurer, Joe L. Wilson, Huntington; Secretary, C. F. Jamison, Huntington

Wheeling was selected as the place of meeting for the next year.

-C. F. Jamison, Secretary. ,

PROTECTION IN BUYING

An Address Delivered at the Annual Convention of the Ice Cream M'f'rs' Ass'n of West Virginia

By Oliver S. Jordan

President, Association of Ice Cream Supply Men

For a number of years it has been my pleasure, and I may say my distinction, to have been closely associated with the efforts of the supply men of the country to cooperate with ice cream manufacturers. As President of the Association of Ice Cream Supply Men it has been my particular gratification during the last two years to have had a leading part in the bringing about of close and practical cooperation between the organized supply men and ice cream manufacturers from coast to coast. I want to ask you to forget for a few moments that I am interested in selling anything and to regard me simply as an impersonal representative of a group of companies with capitalization exceeding \$100,000,000, which make and distribute the essential machinery, equipment, supplies and services which you require in your businesses. This group of companies-there are roughly 100 of them-make up The Association of Ice Cream Supply Mcn.

In the capacity of President of that organization I am here to tell you today of what I believe, without any exaggeration, is the most important event that has happened in the history of this industry wither the last 10 years. That is a strong statement, but I mean it all. This important event is the adoption by The Association of Ice Cream Supply Men of a Fair Practices Code, to govern the sale to you and to the manufacturers throughout the entire country of more than 150 articles of machinery, equipment and supplies or varieties of services running into a gross business of scores of millions of dollars in a year.

This Code of Fair Practices assures an ice cream manufacture of fairness in making his purchases. It protects him against wildcatting, "con" salesmen and "blue-sky" salesmanship, and against all the dirty and disreputable business practices which have at times characterized the unloading of goods upon the ice cream trade.

You will find in the copy of this code which has been handed to you that 40 unifar practices have been listed. If any member of The Association of Ice Cream Supply Men indulges in one of these unfair practices he is liable to expulsion from the Association.

Suppose, for example, that any one of you suffers in an unfair transaction with a member of the Association. You can prefer charges in writing against that supply house. A Committee on Fair Practices of the Supply Men's Association will investigate the charges and impartially hear both your side and the supply man's side. If the charges are substantiated the guilty supply house is expelled from membership, and you and the other huyers of the country will learn, by consulting a directory of Association members and finding that this house is not listed there, that it is no longer operating under the Fair Practices Code, and that the moral guarantee of the code no longer, therefore, holds good in its case.

According to the letter of it, that is exactly what the code is, as your can see, a moral guarantee—an assurance of moral redress against an offender. But a little thought will show you that it also offers an even more practical protection—a material guarantee. For if any member should find charges brought against him and should know that he was guilty, his first desire would be to make restitution, to escape if possible the penalty of his unfair practice. Restitution would mean that the ice cream manufacturer's losses in that particular case were made good, and that would mean in that particular case, both moral and material redress.

There are a few side remarks on this important document that I feel called upon to make. We do not expect you to believe that members of the Association were intrinsically or originally any more honest or reliable than certain firms that do not belong to the Association today. We have not necessarily started out with any sanctimonious introduction into business of the "holier-than-thou" attitude which prevails in some religious circles. There are, frankly, numbers of supply firms, not members of the Association, who do business, as far as can be known, on the highest possible plane, who have a business conscience just like the Association.

But the Association does say, through its adoption of the code:

Buyers of the country! We, the organized body to the supply trade, do declare that the growth of the scenario that the supply trade, in the supply trade, in the supply trade, in the supply trade, to declare that the growth of the scenario of your mouey in baying. Without claiming that our goods are either better or cheaper we here by take the definite stand that they shall be as represented and shall be honestly sold; and because we are the only nationally organized body within this field, and because someone must do it for the first think the supply that the supply the supply

It is not conceit, nor an ulterior motive, that makes the Association take this stand. It is duty, its plain duty as the organized constructive force of the supply field—to itself, to you and to the industry.

Gentlemen, I want to make this code and its operation absolutely clear. The Association does not attempt to guarantee transactions financially. It could not offer a specific financial guarantee for every dealing between every one of its 100 members and every one of their customers, for that would rounitute an obligation that no organization operating not for profit, such as the Association, or without productive assets, could hope to assume. But in the way I explained a few moments ago it nevertheless offers definite protection—morally and, it is safe to assume in almost every case, materially as well. It sets up a protective standard of eithis violating which will mean the loss of so much prestige that violations in the first place are bound to be rare and, in the second place, so potential of penalty that in almost every case the buyer would fail to lose, and if in any one case the buyer did lose it is very clear that no second buyer would ever have to suffer the same experience.

This Code has been presented to the ice cream manufacturers of the entire country, from the Atlantic to the Pacific. It has just recently met with a most appreciative reception from the manufacturers of several of the Southern states. It has the endorsement of the ice cream manufacturers, great and small, in New England, in the Far West, in the Middle West, everywhere throughout the land. One state association has gone so far as to appoint a standard Grievance Committee to cooperate with our Fair Practices Committee in investigating any charges that may be brought by any member of the state association. The President of the National Association of Ice Cream Manufacturers, Mr. F. N. Martin of Spokane, Washington, has only recently written: "Unqualifiedly, I endorse the Code of Ethics that has been adopted by your Association. Too much credit cannot be given for taking such action. It certainly is a step for the betterment of business conditions.

It is an event, the significance of which to this industry will be more clearly comprehended a year from now and 10 years from now than even it is today.

Now, gentlemen, with your indulgence, just a few more words about the Code—or rather the Association that has drawn up and unanimously adopted it. There has been some misunderstanding of the motives, the purposes and the goal of The Association of Ice Cream Supply Men. I have heard it said that it is an organization of 'big boys' as against the 'little fellows." I have heard it said again that it is of monopolistic tendency. Permit me once and for all to dispel such unjustified beliefs.

The Association in its present form was agreed to by about fifty supply firms a little less than two years ago. Among these supply firms were both big and little concerns. When it actually came to the scratch, to the opening of offices and the engaging of a staff, only twenty-six of the fifty supporting firms actually contributed their first year's These twenty-six firms facing a possible heavy financial loss, but confirmed in their purpose by the belief that the industry required a strong. organization with progressive ideals, went on just the same. The results of their work immediately began to bring to their sides both small and large firms from outside, both from among the remainder of the original supporting fifty and from other firms. Today there are roughly 100 of these members. They extend from coast to coast, from the North to the South. They range from one concern with a reported capitalization of \$26,000,000 to at least one other concern whose net annual earnings do not reach five figures. They include firms traveling 190

men to firms consisting of little more than a principal, an office girl and a shipping clerk. They make up an organization neither for the "big boys," nor for the "little fellows," but an organization through whose developing efforts the "little fellows" can more quickly become "big boys" and through which both big and little firms can most effectively serve their customers.

The monopolistic idea can only have arisen from lack of authoritative information. The truth is that the Association welcomes all firms to participate in its work and benefits. The only thing required is that the Code of Fair Practices be abouttely subscribed to—that an applicant for admission realize that he is publicly adopting for himself the standard of ethics it provides. In the very nature of things there can be nothing monopolistic in a broadly constructive effort to increase the scope and prosperity of an industry, for the success of the effort will depend upon the widest possible participation in it.

We want you all, whether ice cream manufacturers or supply men, to write to our Secretary, Mr. Everett, and ask him about the Association, what it can do and is doing for you, how it can cooperate with you. You will find that the Association has outlined and set in motion a big, a very big movement for the betterment of your industry.

TWO KINDS OF EMPLOYMENT

In the Monthly Labor Review, Washington, D. C., Royal Meeker, United States Commissioner of Labor Statistics, states:

There are two very distinct kinds of unemployment—what we call out-of-work unemployment and unemployment on the job. Both result in material loss to the individual worker and to society and in the demoralization of the workers. By unemployment on the job is meant the lost time and consequent slowing down of production because of the deliberate expert loading on the part of the workers or the lack of a proper system of routing work, and insufficient reserves of tools, machines, and skilled pivotal men to keep the whole force working smoothly.

Strikes and lockouts have contributed their thousands to the ranks of the out-of-workers, but irregularities and failure in supply of raw materials, transportation, and demand for commodities produced, and lack of proper organization in industry, have contributed their millions. No statistical statement is possible, for no accurate information exists at to the time lost by reason of strikes, to say pother time lost due to other causes. We do know in a general way that unemployment has existed during prosperous conditions of industry to an appalling degree.

The percentage of unemployment among nonunion workers is always higher than among union workers. This was especially true of the United States before the war, when there existed a large reserve force of unorganized labor.

Strikes today, as always, are insignificant in causing stoppage of work in comparison with unemployment due to dearth of raw material, lack of orders for output, insufficient transportation, lack of a properly halanced organization of industry, lack of handling men, failure to gain and keep the good will of employees, failure to make use of the tremendous latent creative force lying dormant in the workers.

OUR TRANSPORTATION PROBLEM

Its Solution Will Require Intensive and Whole-hearted Cooperation Between Carriers, Shippers, Consumers and Passengers

By R. W. Woolley

Commissioner, Interstate Commerce Commission
From an address delivered at the annual convention
of the National Association of Ice Cream Manufacturers

In discussing my subject, let me first say that I appreciate greatly the compliment paid me by your President. I have been a member of the Interstate Commerce Conumission for three years, and every day I realize, more and more, just how little I know about Transportation.

Transportation is the greatest of our problems. Herbert Hoover, who made such a wonderful record as a food administrator, and has more or less been in the public view since the armistice, stated in a speech at Minneapolis a few weeks ago, in discussing power and what we would have to look to in the future to expand nationally, "a problem of pressing importance is the whole question of transportation. At the present moment, our inability to move the commodities which we create is stifling production. It is increasing the cost of distribution and has placed a tax on the American people in decreased production and increased cost of distribution greater than all the taxes imposed by the war.

"We have today in Minneapolis ample proof of the rightful cost imposed upon the farmer, consumer, and public. There is a premium over freight cost from 10 to 20 cents a bushel for wheat at the mill door, compared to wheat in the elevator a few hundred miles away, solely because cars are not available. Either the farmer is losing the amount, or the consumer paying it. Furthermore, to carry the picture further, the railways, in an endeavor to remedy this, are diverting cars from the lumber industry. Already certain mills are partially closed; men are thrown out of employment in the mills and in the building trades. Is this not a price in human misery and national efficiency that warrants some national concern?"

I am afraid that if an Interstate Commerce Commissioner had stated it so boldly he would have been accused of appealing to the passions of the rabble. so I am going to let Herbert Hoover, rather than myself, tell you just how serious the transportation problem is.

What the solution is to be, I am sure I am not here to attempt to predict. What I hope it will be and what you hope it is going to be will depend upon more patience by American people than they have yet displayed, and upon the most intensive and whole-hearted cooperation of shippers, consumers, and passengers.

Since March I, we have returned to what is known as private control. Private control under the new Tranpsortation Act, which is the most farreaching and most satisfactory piece of legislation relating to the railroads ever passed by Congress, the roads broke down; in other words, it was found utterly impossible to get away rapidly from some of the very excellent and essential economies in handling and routing cars which were inaugurated under the single control of the Director General. The terminals, you will recall, became clogged. That was due, of course, in a great measure to what was known as the switchmen's strike. But I call your attention to the fact that under unified control we had the great steel strike, and we had the miner's strike, and we had other strikes that threatened more or less trouble, but they quickly recovered, not because there was any more patriotism on the job, not because there was any more zeal to be efficient, but because the carrier officials could not exercise their judgment in routing around terminals. They had to go through terminals, and these terminals were paralyzed, both by congestion, and because of the fact there was a strike, so it, all of a sudden, became apparent that the normal movement of coal to New England and to the states of the North and Northwest had been checked; in fact, it was way below normal, and that unless something heroic was done, we were going to have, not only the people of those Northern sections freezing, but production would be stopped, people would be out of work, financial depreciation would come, the picture you could not overpaint

So in this emergency the railroad officials themselves simply said to the Interstate Commerce Commission, "you will have to exercise the war emergency power of the Transportation Act. We are technically still at war, and those war powers will have to be exercised."

The Commission immediately took charge of the routing and the assignment of all freight equipment. We at first tried to do it with as little inconvenience as possible to general industry, but as the alarming picture a few months ahead became more vivid, we had to put on the screws.

The Commission placed this entire matter first in the hands of one Commissioner. We said if this problem could be worked out one man could do it; but ten men can't.

Then the work became so heavy that this Commissioner was given additional assistants, with two other Commissioners. That division, as we call it, of the Commissioners. That division, as we call it, Mr. Aishton in charge of this routing, has worked marvelously. It has done the most stupendous job that probably has ever been accomplished with the single exception of the moving of the troops, and munitions and supplies to seaboard to win the war.

We have talked a good deal about getting back to normal, but in the transportation industry, we are not back to normal. We have industry by priority, If the Interstate Commerce Commission were to withdraw today absolutely from all directions of those cars and were to let the 160, odd, railway systems each gather in their own equipment, and the enormous waste hauling that characterized multiple control in the past was returned, so acute would your car shortage become that almost in a flash industry would be partially, if not wholly, paralyzed.

Now, I am not here arguing for return to federal control, and I want to make it perfectly plain that I am not arguing for Government ownership, but I am picturing to you the situation as I see it, and as Herbert Hoover and others see it, in order to impress upon you the thought that men like you, who are engaged in this great ice cream industry and I want to say here, parenthetically, that I was amazed to find how great this industry is, and what an enormous part it flays in our business life, when I heard the arguments in this case that Mr. Davies just referred to in his very able and entertaining talk. I want to say to you men and ladies that you have got to think nationally in this question of transportation. The day for small systems and innumerable competing systems has gone, the new Transportation Act provides that there shall be a consolidation of systems into a few great systems, and the authority is given the Interstate Commerce Commission to set the processes of consolidation in motion.

We have engaged, as a great authority on this subject, Professor W. C. Ripley, of Harvard, who is now at work on the report, and in all due time, probably not later than January first, will submit to the Commission a plan by which these consolidations can be started, and what they will ultimately mean. As to just how many systems there must be or shall be, I am not here to discuss. In fact. I don't think any member of the Commission has any definite idea. There are some who think there should be probably six great systems, some think more, for instance, Walker D. Hines, who was the Director General of Railroads, and did such an able job, thought about six great systems should be the outcome. Some members of the Commission think probably 12 or 14, some think only one, privately owned, and privately controlled, but under proper regulation.

You know it is a notable fact that in the past, great railroad systems which are now not only going, but profitably, have been formed out of a number of unprofitable systems. I will call your attention to the fact of the Atlantic Coast line, which is made up of a number of weak lines, to the wonderful work that has been done in that way by the late E. H. Harriman, and so on.

In these days of great specialization, of high costs, and of intensive competition, it is more difficult for a small railroad system to exist than it formerly was, and especially where that system was built largely to take care of certain conditions which have passed. That is true of some of our roads in the Southwest.

When we get these great systems properly con-

solidated and started, the next question is going to be power. Today we are a most wasteful nation in the world with our power. I speak more particularly of coal power for power coming from steam or hydraulic power, we are utilizing in a measure. For instance, on the C. M. & St. P. Railroad they have electrified several hundred miles, but that has been costly, and has not yet justified itself in a financial way. But coal is now coked which never was coked before. For instance, down here at Granite City, Illinois, there is being completed a battery of ovens to coke Southern Illinois and Southern Indiana bituminous coal without any mixture whatever of what is known as the Connellsville or the Pocahontas or Elkhorn Coking coal. That battery has been erected, I believe, at a cost of something like \$10,000,000. That is a pioneer stroke in a brand-new economic world. That means this: for instance, of all the coal produced in the United States for the year 1918, I saw some figures reeently, only about 5 per cent. was what is known as coking coal, and which is used in the manufacture of pig iron.

That coking of the high volatile bituminous coal means increasing the possible coking coals of this country to between 45 per cent. and 50 per cent. of the total amount of coal mined in a year.

If all of the bituminous coal consumed had been coked in 1918, if I am at all or treet, and all of the by-products recovered, the fine oil alone produced, which by the way, is like gasoline, but about 28 per cent. or 33 per cent. more efficient, the fine oil produced would have been double the quantity of gasoline produced from pertoleum pumped out of the ground in that same year. Think that over. That fine oil also as a basis for dyes would have given the United States control of the dye industry of the world.

The ammonium sulphate produced as a hy-product from that coal would have doubled the productivity of all the soil tilled in the United States. The amount of tar produced would have given us the cheapest and most plentiful supply of road-building material of any country in the world. That is just a few of the things that come from this coking of coal.

So acute has this question of transportation become in the Eastern part of the United States, and so great are the possibilities of this development of new sources of power, that Congress, a few months ago, upon the recommendation of the Director of the United States Geological Survey, and the Secretary of the Interior appropriated a sum to have a special survey of power made in what is known as the Boston, Washington District; that district is 200 miles wide in some places, but letween 80 and 90 per cent, of all the power used in the United States is used in that district.

What has that to do, not only is it to produce more power than ever was produced before, but the idea is to hook up on great trunk lines all of the power produced in each of the many industries along in this district, and by proper distribution of this power, to take care of the peak demand of every industry or every public utility at the time that that peak demand comes, without producing a kilowatt of waste power.

The man who is at the head of that survey is Mr. Murray, who was Vice President of the N. V., N. H. & H. R.R., and had charge of the electrification of that road between New Haven and New York, and is probably the foremost authority on the subject in the country, and it is contemplated to show that we should cobe all coal used on the railroads at the pit heads of the mine, and after recovering the by-products, we shall convert that coke into power there, and transmit it over wires. In other words, that all the railroads must be electrified, that that is the next great step, that we have been wasteful.

But do you realize that between 35 and 40 per cent. of all the traffic on the railroads is coal, and that 45 per cent. of all the coal carried by the railroads is to furnish motive power with which to haul it?

Now think of that, and think of what a marvellous saving we have ahead of us by coking that coal at the pit head of the mine, recovering our by-products, piping that coal gas into industrial centers, and I have forgotten to say that the production of cubic feet of coal gas is enormous, it runs into the trillion feet per annum, that would come from the coking of the bituminous coal that we use annually.

That, with the consolidation of these railroad systems, with the production of power along strictly economic lines, and also the distribution along strictly economic lines, and under proper regulation, we are going to have, eventually, the greatest transportation system in the world. It is going to the only way in which the cost of transportation can be reduced to the consumer, but it is going to take practives of the consumer, but it is going to take patience. more patience than we have exercised yet, and it is going to take the strictest cooperation of all.

I would like to say in this connection-don't be swayed too much. In fact, please don't at all, if you can help it, be swayed by the propaganda that is spread all over the land today against anything looking to a change from what we have. Some of the best-intentioned, high-minded men I know of are in the railroad business. They are my friends; I respect their opinions; I know that technically they are experts, many of them, and as such their opinions on purely technical operating matters or traffic matters are bound to be respected and followed, but so many of us, and I say this with all good feeling, have grown up working for one railroad, and looking down, as it were, between two streaks of steel, and never out into the pastures on either side, to take in the whole picture, that they have grown old or past middle age, not capable of grasping the problems nationally, so that when you want to know where we are going, don't take too seriously what you get from a strictly railroad source. The thing for us to do is to anticipate the future, and as Mr. Davies says, let us anticipate and forestall anything like socialism or the man on horseback, let us profit by present and recent past

experiences, and build for ourselves, instead of leaving it purely to a few men who are interested principally in the business end of their corporations. and cannot necessarily take as big a part as, with all good feeling probably they would like to, as those who see the situation. I may not have made myself very clear, but let's hark back again for a minute. When the railroads were in a sorry plight in October and November, 1917, they came to what is known as the Official Classification District, that is the section of the country North of the Mason and Dixon line, and East of the Missouri, came to the Interstate Commerce Commission and asked for an increase in freight rates of 15 per cent. They said that they needed them to meet the demands of labor and the rapidly increasing cost of materials, but their immediate trouble was labor, that it was leaving skilled employment for vastly better employment in the steel works, in the munitions plants, in the shipyards, and so on, and that the railroads themselves, being restricted as to what they could charge, both in freight and passenger rates, by regulation of the Interstate Commerce Commission, they could not meet the competition.

Every one knew that was true, and purely in a spirit of helpfulness the Interstate Commerce Commission asked "Is this the only increase that you will need?" "No, we will need more. We are in a rising market and we will have to come back and come back and come back." Of course, we know what happened. The situation got so acute that the railroads had to be taken over and were operated under a single management, their equipment was pooled, and there was unified control. whole world was upside down. The big job was to move those cars and passengers and freight to seaboard, to get the boys over to Europe and to get the munitions and the innumerable supplies over there to back them up. That was the one and great consideration. Everything else had to step aside. Of course, your toes and my toes were trod upon. things were put out of joint, people being human, complained, but the great thing is that the job was done, and it was well done.

Those roads were taken over under a guarantee based on the returns, on the net operating revenue for the years 1915, 1916 and 1917. In the year 1915, the net operating income, as I recall, was about \$727, 000,000. For the next two years it was around a billion. Those were what was known as the miracle years in railroading. Only twice before in the history of railroads had the \$727,000,000 of 1915 been exceeded. But the average meant that the United States government would have to pay, with these new conditions coming on, higher labor, higher costs of materials, higher everything, would have to pay a rental of \$935,000,000 per annum.

Well, they did it, and after two years and two months the difference between the amount realized from operations and the amount due the carriers was something around \$900,000,000. We were immediately told that that was due to the wasteful governmental operations. Mind you, in all that time, the increased frieight rates were only increased once, that is 25 per cent. Every other commodity—and the freight transportation is a commodity, just like the clothes on your back—every other commodity in this country went skyward; the increases were, in many cases, 200, 300, and 400. But a ton of freight brought more transportation than it ever had in the history of the world.

We returned to private control under the Transportation Act, which provided that for six months following March 1, the date of the return of the roads, that the guarantees were to continue. That guarantee period epided September 1, and under private ownership those six months have cost the people of this country in taxes, which we will have to pay out of the treasury, \$634,000,000, as against a showing something like \$500,000,000 cm over two years and two mouths of so-called wasteful control under a Director General.

Now think that over

In addition to that, there went into effect, on approximately September 1, an increase of freight rates and passenger fares, which it is estimated will not a billion and a half dollars per annum.

Furthermore, under the Transportation Act, a revolving fund of \$300,000,000 was created from which to take care of the urgent capital necessities of the carriers, to lend money to those carriers that could not borrow it at a reasonable rate of interest anywhere else. Under that loan so far, applications totaling \$91,000,000 have been appropried-

Now, with it all, if the Interstate Commerce Commission, or some other governmental body has not had strict and complete control of the movement of equipment since the middle of April, or the first of May, probably, last, up to the present, New England and the Northwest would probably be in danger of freezing to death. They are not going to, we have moved that coal, those two sections of the country are in splendid shape and now the Interstate Commerce Commission is wrestling viciously with the problem of how to get enough coal into the cellars of the States of Ohio, Indiana, Illinois and Michigan, three of the four being among the great coal producing states of the country.

The other day both Senator Harding and Governor Cox called the attention of the Commission to the fact that 46 per cent. of the coal of Ohio was moving, under priority, to fixed destinations and that 30 per cent. of the coal was moving over the docks of Lake Erie, and that the people of the State of Ohio had to do the best they could with the rest of it.

So, as a result, for the time being, we have had to cut off all useful open top equipment for anything except for the movement of coal; that means a curtailment of road building and of building generally.

That is serious. But we have an alternative there that we have got to take. Now, of course, that is only temporary. Just as soon as the coal situation is relieved we will be able to start building materials and road building materials, etc., again, in a limited way, but the shortage of cars is very great, of all kinds.

Of course, I should say pareuthetically, that by the routing of the closed top car to the West, the grain fields of the West and the Middle West, we have moved grain in a much greater way than any one would liave dared to predict on July 1, but still there is a great deal to be moved, and we are just in the midst of the small grain movement from the Northwest, and we are not out of the woods on that, by any means, but we are pulling out.

There has been under federal control—there were built a number of, I think it is 12000, freight cars. Since the return of carriers to private operation, the building has been very negligible, owing to the difficulty they are having in getting capital from private sources. That has got to come when the financial market gets easier than it is now, when it will be possible for the carriers to sell their securities at something like par and not have to sell notes, short time notes or mortgaged bonds at a cost of 7½ per cent, to 8 per cent, puls prokerage. The railroads can't do that, because they are limited to earnings of 8 per cent, practically speaking, and they cannot borrow money at that great rate of interest, and keep away from the scrap hear.

But with the return of conditions to normal, it is only fair and reasonable to believe that the price of the values of bonds and stocks in railroads is going to become more attractive to the purchaser.

There is a great deal more on this subject that I could say, but it would merely be more going into the details, which are more or less tiresome. I want to impress on you this, that we have a great future, that the picture of America in the next 10 or 20 years can't be over-glorified. Probably our development in that time will be relatively greater than in any other period in our history. But we are not going to have that development unless we grapple with and solve this transportation problem. And this problem is your problem, not the railroad man's. It is every man's and every woman's problem, and it is something you should give not only your undivided attention to in the way of reading what is written on the subject, but in studying these things out in your own local conditions and looking at the thing from a national viewpoint all the time.

In closing, I wish to thank you again for listening so attentively to what I have had to say, and to say that I am sorry I cannot discuss the case of the ice cream manufacturers before the Interstate Commerce Commission that comes before me judicially, but I listened with a great deal of interest to the instructive talk of my friend, Joseph E. Davies, of whom I am very fond, and whom you are very fortunate in having as your counsel, but to say that the Interstate Commerce Commission is always sympathetic and our one aim and desire always is to do the fair thing, and the constructive thing. And that the Commission, individually and collectively, realizing the burden that is upon them in this matter, ask and confidently expect your unqualified support in what we are doing.

BUILDING THE FOUNDATION

Business Success Is In Direct Proportion To the Service Rendered

By Frederick C. Mathews President, The Frederick C. Mathews Co., Detroit, Mich. From an address delivered at the annual convention of the Pacific Ice Cream Manufacturers Association

Whenever we are dealing with other people, we are placed in the position of servants. If we make goods which we intend to sell, we must put the best quality in these goods that conditions will permit

Unless we are honest in the work we do, unless we are honest in our desire to serve, we have not laid a single stone in the foundation of our achievement. Some ice cream manufacturers are perhaps building a structure that they mistake for a success, but it is only a superstructure—they have neglected the foundation.

During a season when the trade is forced to come to them they may show remarkable moneymaking results, but in another season, when they have real competition their houses of cards will have fallen.

There can be no success in any direction unless there is a solid foundation. This foundation of success is composed of different qualities. It is not dependent upon honesty alone, or upon thoroughness. Ordinarily it depends upon many other coordinating qualities, they are active qualities, they are harmonious.

Back of the success of each person who has achieved anything worth while will be found a bedrock principle upon which the entire foundation of success depends. That principle is service,

Some ice cream manufacturers believe that when they give their dealers excellent delivery service they have completed the service end of their requirments, when as a matter of fact they have just begun. They have just touched upon the important service end of their business, or the main foundation stones.

When your ice cream is delivered to a store it must be dispensed properly by the dealer or two things may happen: first, the public will not like your goods; second, the dealer will not consider the ice cream business profitable. The majority of ice cream manufacturers neglect their dealers. They assume that their dealers know all about ice cream, how it is made, how to take care of it after it arrives and how to sell it; whereas, facts show that a great many dealers do not know how to take care of it and the great majority of them certainly do not know how to sell it.

Ice cream today is largely sold by the weather, As a matter of fact, it should be sold by good merchandising in all kinds of weather, bad, indifferent or good. This fact is proven clearly and is demonstrated daily by those small number of dealers who understand how to sell ice cream and who sell it continually, winter and summer, rainy days or beautiful, sumshiny days.

A dealer of ice cream should be considered as

your salesman, not as some dealer. He should be coached in selling. He should be taught the importance of selling more ice cream. He should be given hints and suggestions on how to make his soda fountain and soda partor inviting. He should be told the cost of advertising material furnished him so that he will not waste it. He should be shown the value of displaying this advertising material properly.

But so many ice cream manufacturers say, "Yes, this is true. He should be shown, but can he be shown?" Please remember that every dealer is a auxious to make money as you are and that if your salesmen who go from your plant to his store know how to sell not only ice cream, but your mechandising and advertising service, that dealer will appreciate your service and will be glad to carry out your ideas because your ideas make him money.

How many ice cream plants have thoroughly instructed their own salesmen how to sell the dealer? From my investigation I find there are very few manufacturers of ice cream devoting anywhere near enough attention to this great work.

The first language of mankind was a picture language. The modern sales and advertising experts appreciate the value that pictures possess in conveying an idea quickly. The coats-of-arms of the nations and commonwealths and municipalities and families and trade marks of companies are but expressions of this age-old inclination of the mortal mind to picturize. The more recent form of drama known as moving pictures is simply one type that carries out this human inclination to receive stories in pictures.

As we go back to the works of ancient authors and as we study the inscriptions on the tombs of the Pliaroaks, we find that pictures have been used from time immemorial to express ideas. These pictures have become symbolical. The cross is the symbol of Christ. Therefore it signifies, sacrifice, mercy and love and faith and many other of the nobler characteristics, and so the minds of people deal in many symbols. These symbols are of many varieties. They may signify their meaning in colors or through forms.

Our speech is filled with symbolical expressions. The child starting in school learns forms. He learns colors. That child deals in symbols because later on he must use symbols in his thought and in his work.

The English alphabet consists of 26 symbols or letters. In arithmetic, in accounting, everything that pertains to them will be found to be expressed in ten symbols or numerals beginning with 0 and ending with 9. No amount possibly can be thought of that cannot be expressed by combinations and repetitions of these arithmetical symbols. All of this may seem to have nothing to do with selling, better merchandising and advertising, and yet it has a great deal to do with selling, better merchandising and advertising. What I am trying to impress upon you is that you should call to your mind the truth that in all thought we do a great deal of symbolizing.

The dealer should be shown the value of the effect upon the mind of the school child by the illustration of a beautiful dish of ice cream, a reproduction in its natural color so as to invite a desire to taste it. Further he should be shown the value of displaying the cut-out or hanger or a placard, containing a beautiful illustration showing the food value of ice cream-to Mrs. Housewife who comes to his store often and showing her that ice cream is an ideal dessert and more economical and has a greater food value than most desserts. But how many ice cream manufacturers instruct salesmen to teach dealers the importance of display material? I have demonstrated the effectiveness of showing the dealer in plain, but simply language, the importance of advertising cards and by personal interviews with hundreds of retail dealers.

The organization I am affiliated with have spent a great deal of money and time to prove their contention that the ice cream trade today is in its merchandising infancy. We have had to worry with an element in the trade who seem to think that their mission is finished when the dealer receives the goods and pays for them and who grumble about their ice cream sales in bad weather and winter and consider it almost hopeless during this period to proceed with any plan to increase sales. Let the ice cream trade as a whole, let each ice cream manufacturer individually spend the time to study better merchandising methods to train salesmen to better merchandising methods so that his representative can impress upon dealers by personal interview and by using effective advertising material that better merchandising methods are absolutely needed in the retail store in order to place ice cream on the same merchandising basis as many other products, candy for instance. This educational work should, I believe, be prosecuted vigorously. It is at present being developed in many cities in the United States and Canada with great results; in fact, with wonderful results when the cost is considered.

It is not a speedy process. No educational process is speedy. It takes time and effort—it takes continuous effort but it certainly is worth while and it weds dealers to the manufacturer (his dealers) when the work is carried on continuously and effectively. It does not require a genius—unless a genius be described as one with infinite capacity for taking pains—to develop salesmen to carry on the work. It does not require selling genius to convey the idea to the dealer. It requires only plain, simple English to explain the importance of good merchandising.

Now, it is an absolute fact that natural law governs success in any line of business precisely the same as it controls the falling of the apple. Ordinarily we do not recognize the truth that there is natural law back of success, because we have not familiarized ourselves with the manifestations of that expression of natural law. Scientists admit freely that all matter is governed by natural law and that there is a basis of relationship between the electrons, the atoms and the molecules of the different classes of matter. The scientist recognizes this relationship and he expresses his ideas through the science of chemistry. When we deal with intelligence we too often assume there is no difference between the minds of different people. We seem to be dealing with something so far from material that we merely concern ourselves with the similarity of intelligence. We forget perhaps that people who are predisposed to a certain kind of study are people who are scarching constantly in that field, that this occurs all the while is proved in many ways. If you are familiar with the trade mark law you realize that two or three different manufacturers in making applications for trade marks will sometimes submit the same designs, the same wording, the same colors. Later on if you were to follow these cases you would perhaps discover that other manufacturers had authorized the same trade marks and claim the same design. No matter what we may struggle to attain we may be certain that somewhere else some other person has thought of the same thing. I am simply illustrating this to prove that the retail dealer is desirous of improving his conditions just as much as the ice cream manufacturer is interested in improving his and that the connecting link of improvement, that the inspiration and the enthusiastic idea is to stimulate the dealer and get his point of contact by showing him that you are interested in his welfare and that you are interested not only in how much ice cream he sells, but in how he is to become a better merchandiser for all of his other lines...

In other words, to get down to plain, ordinary brass tacks, a window display of any kind or a display of any kind that will attract people to his store and to his merchandise is of interest to the ice cream manufacturer no matter whether or not the display contains a single picture illustrating ice cream. More attractive fixtures and better salespeople for any line the dealer handles means better salespeople for ice cream. Enthusiasm and pep in any store selling ice cream means more ice cream sales because of the enthusiasm of the clerks for all the product they sell. Cleanliness, bright counters, clean windows help ice cream sales. Courteous, smiling clerks that welcome you help ice cream sales. Therefore it should be the duty of every ice cream manufacturer to cooperate with the dealer in assisting him to obtain information on how to make his store a little John Wanamakers or a little Marshall Fields in spirit, cooperation, courteousness and welcome. The great ignorance shown by the average dealer in the use of handsome display cards is demonstrated time and time again.

I know of a case where an ice cream manufacturer

paid from \$2.50 to \$3.50 for a handsome cut-out and sent it out to one of his dealers to display. Twenty-four hours afterwards he went up to see the display and it could not be found, after a search this display card was found at the bottom of a paper bailer, destroyed. I blame the ice cream manufacturer more than I do the dealer. If that ice cream manufacturer had sent a salesman or gone himself to the dealer and told him something as follows this would not have happened. He might have told the dealer: "Mr. lones, here is one of the most beautiful cards that we have ever purchased. The cost is approximately \$3.50. It should be good for a place in your store for the next thirty days. If we are willing to pay \$3.50 for this placard to display in your store to sell more of your ice cream for you, we know you will be willing to give us a space and keep this placard in that space."

If this dealer had been sold the advertising on the idea that it would produce results for him and on the idea that this advertising costs money he would have either taken the placard and kept it in its place, or advised them that he had too many placards and could not use it at present. He would not have put it in the paper bailer. What is the use of purchasing large supplies of advertising material unless your own sales organization tells dealers how to get it displayed.

Another thing that I wish to impress upon every man present. Most of you are great users of this ont-door display advertising. It is my honest and earnest opinion which has been summed up by an investigation made by this company with thousands of retail dealers that your display advertising is overdone. How many people walk into a dealer's store and ask for Smith's ice cream? Remember that the great majority of people, when they go to a store for ice cream go there because of the attractiveness of the soda fountain, the courteousness of the clerks, and the quality of the stores products. They don't go there altogether because some ice cream manufacturer speaks lond on a bill board. "Eat Smith's ice cream." If you are advertising on the bill boards to show the dealer how much advertising you are doing because your competitor is doing so, you are really weakening your own case. If you would spend a large portion of this money in taking every one of your customers and developing him into a real ice cream dealer, you would see inside of one season, the increase in business made possible by good merchandising methods. There is too much competition between ice cream manufacturers in seeing how big they can get their names pasted all over a community. A limited amount of this kind of publicity is good but the best publicity a man can purchase is that display publicity on his customers' counters, in his customers' windows, where the ice cream is within a few feet of the desire created by the publicity and in backing up this publicity with selling plans for the dealers to stimulate their fountain sales the year round and the pint and quart sales to the house-

In concluding this paper I would suggest that

every ice cream manufacturer place before every one of his dealers in printed form or by personal salesmanship the following facts regarding the United States of America, for the psychological efiect upon the trade:

Let them know that the United States of America with but 5 per cent, of the earth's population, produces 24 per cent, of the earth's agricultural supplies.

Let them know that the United States of America produces 40 per cent, of the world's supplies of mineral products and manufactures 35 per cent, of the world's goods.

Let them know that the United States of America has a natural wealth of above two luundred twenty-five billion dollars, while that of our nearest competitor, England, is just eighty billion dollars.

Let them know that with these facts on paper and listed on the world's books it is impossible for them to go wrong.

Let them know that our trade balance today is five billions.

Let them know that we have repurchased our foreign placed securities, a total value of about eight billion.

Let them know that we have loaned our allies nine billion to ten billion.

Let them know that half of the gold in the world is in the United States and that the deposits in the banks of this country are billions more than the totals of all the other banks of the world.

Now, some of you might say, "What has this to do with ice cream?" I say that the thing for you, gentlemen, to do is to educate your dealers to become better business men and the only way to educate them to become better business men is to give them the facts about the world's business and continuous facts regarding big business and little business and then the details of how successful big business is done and how successful little retailers have become successful. The thing to spread today throughout this land is the gospel of enthusiasm and optimism. Fear has spread throughout the land and it is this fear of the future that is curtailing business. We must eliminate fear for fear is poisoning the blood of the nation and you in your territory can help eliminate fear by furnishing every dealer with a printed statement of the facts which will throw back in the face of fear spreaders the truth and do a great deal to improve conditions and to make your dealers feel more friendly towards you and to realize that business will steadily continue to go ahead and proceed along prosperous lines and that this country now faces many years of continuous prosperity.

MICHIGAN SHORT COURSE

A course in ice cream making will be given at the Michigan Agricultural College, beginning February 28 and ending March II. All inquiries regarding the course should be directed to Prof. O. T. Goodwin, Michigan Agricultural College, East Lausing, Mich.

DECREASING DELIVERY COSTS

Chicago Ice Cream Company Reduces Delivery Costs Through Actual Costs Records

By F. J. Bridges

General Manager, The Hydrox Company, Chicago. III.

Distributing well over a million gallons of ice cream yearly to the Chicago territory, as we do, requires a reliable delivery service. We have found that customers are often won or lost depending upon prompt and regular deliveries.

It is only a little over two years ago that the Hydrox Company operated horse-drawn vehicles for all delivery work. It semed to us that on account of short hauls and the many stops that had to

ceptional service behind it, we have standardized on the make of the first gas-driven truck that we bought, and are now using this truck in the following capacities—two-, three-and-one-half and five-ton, for all work except a few of the very short hauls, which are now handled by electric trucks.

By means of these trucks our business has been materially increased. We are now able to extend the range of our delivery service. Our trucks now

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RECORDS OF DELIVERY COSTS

be made, it would not be practical to use motor trucks.

We were willing to be shown, however, and decided to make a comparative test between horses and motor trucks. We determined that accurate cost records would be kept on the trucks as they had been kept on the horses, not for the information itself, but for what it would enable us to do in reducing our deliver, expenses.

As a result of the comparative test that we made, we are now operating a fleet of twenty-four trucks. We plan to add as many more in the next few months, which will practically displace our horse-drawn vehicles.

Because of the splendid performance and the ex-

run to the suburbs, making seventy-five miles a day on some trips.

This was impossible when we were depending upon horses for our delivery. A product such as ice cream, which, during the hot weather is most in demand, must be handled rapidly. We feel that our business could not have been thus extended were it not for our motor trucks.

The biggest thing that our trucks have done for us has been to enable us to do a much greater volume of business and therefore increase our opportunity for the profits that this business brought. But this is not the whole story, by any means.

Our cost records, kept on the forms of the National Standard Truck Cost System, show that our trucks, operating between thirty-five and forty miles daily, make approximately thirty deliveries each day. The daily cost runs from seven dollars a day on the two-ton trucks up to fifteen dollars a day on the five-ton trucks, exclusive of driver's salary. These records also show that it is far more economical to deliver ice cream by trucks than by horses.

These trucks saved us over \$2,0,000 last year. With horse-drawn vehicles the cost per gallon for delivery was \$0,0506, while with motor trucks this cost has been reduced to \$0,0322. In other words, there has been a saving of almost two cents a gallon, on each gallon of ice cream delivered, and we deliver over a million gallons of cream a year. In this cost per gallon we have not included ice, salt, etc., which is the same in both cases.

Our trucks are on the job every day, including Sundays, during the "ice cream months"—they average over three hundred working days a year. In this time they cover from ten to fourteen thousand miles, and deliver as high as five hundred gallons of ice cream on some days. Our truck drivers are really in the ice cream business, for they are paid on a commission basis. In this connection the drivers of the motor trucks won out, due to the fact that these trucks stayed on the job and helped them supply the demand for ice cream. Last July, for instance, one driver made sla2.00 in one week, and taken the year round, our drivers average between \$50.00 and \$75.00 a week, or over \$250.000 a year. Our drivers are enthusiastic over motor trucks.

We are great believers in accurate cost records, and keep them, not alone to know how much it is costing us, but because an analysis of these costs enables us to find methods of doing our work more economically.

They show up lost time, lost efficiency, and the figures for the first months aided us materially in decreasing the costs for subsequent months. The records shown herewith are on the forms of the National Standard Truck Cost System, and are part of the figures for four of the trucks. The driver's wage is figured at the union scale for motor truck drivers in Chicago.

ICE CREAM COURSES AT THE UNIVERSITY OF ILLINOIS

Collegiate Curriculum So Planned That Students Are Thoroughly Trained In All Phases Of the Business — Short Course Also Offered

By H. A. Ruehe Associate Professor, The University of Illinois

About ten years ago the Department of Dairy Husbandry of the University of Illinois realized that if it were to keep pace with the trend of the dairy manufacturing industries, it would necessarily have to install equipment in its laboratories in order to teach its students how to make ice cream. Consequently the necessary equipment, including a dry hardening room, was installed.

The curriculum has been planned for the regular four-year college student who desires to specialize in dairy manufactures. Although the ice cream course is devoted entirely to the study of ice cream and other frozen products, this course is planned as one of a series covering dairy manufactures. It is of prime importance that those making a thorough study of ice cream should have training in dairy chemistry, dairy bacteriology, milk production, business organization and management, mechanics, refrigeration, butter making, milk condensing, etc. Therefore, the student is encouraged to devote his first two years to those courses which are of fundamental importance to him, and he is not expected to take the specialized, technical course in ice cream making until his junior or senior year. By so doing, the student can apply the principles and theories. which he has learned in his various courses, to the ice cream business. The purpose of this couse of study is not merely to train men to be ice cream makers, but is to train the student thoroughly in all phases of the business.

It should be said that not all of the students' training is given in the confines of the Dairy Department,

as they may take courses in the College of Commerce, the College of Engineering, and the College of Liberal Arts and Sciences.

The specialized course in ice cream making covers the buying, selection, mixing, and testing of materials for ice cream manufacture; factory construction, equipment, and operation, including the operation of refrigerating machinery, and the freezing, hardening, and marketing of the frozen products. The subject matter is presented in text books and by lectures, and the student is given enough laboratory work to become familiar with all of the processes in the factory.

In addition to the courses for the four-year university students, the department has for a number of years given a two weeks short course in ice cream and butter making. This course is generally given the latter part of January, which is a convenient time for the commercial men. This course is planned to meet the needs of those commercially engaged in manufacturing these products, and there are no special entrance requirements for those who desire to attend. The aim of this short course is to give as much practical information along the line of ice cream and butter making as is possible in the short time allotted to it.

There is an ever increasing demand for men thoroughly trained in the business of manufacturing ice cream. The Department of Dairy Hushandry of the University of Illinois desires to turn out its allotted quota of such men.

WISCONSIN PROGRAM

The sixth annual convention of the Wisconsin Association of Ice Cream Manufacturers will be a two-day convention, January 20 and 21, with headquarters at the Hotel Plankinton, Milwaukee, according to the program which follows:

THURSDAY, JANUARY 20, 1921.
Registration of Members old and new, 9:15 to 10:15 A, M.

10:15 A. M.

Address of Welcome by Phil. A. Grau, Business Manager, Milwaukee Association of Commerce.

"Refrigeration for Ice Cream Plants," by J. G. Hammerschlag, District Manager of York Mfg, Co. "Light," by D. W. MacWillie, Vice-President, Tri-

State Ice Cream Co., La Crosse.

"What We Are Doing for the Ice Cream Industry," by J. F. Thomas, Wisconsin Dairy Council, Milwaukce.

2:00 P. M.

"Protection in Buying," by Roberts Everett, Secretary-Manager of the Association of Ice Cream Supply Men, New York, N. Y.

Address by George J. Weigle, Dairy and Food Commissioner, Madison, Wis,

"A More Logical Legal Standard," Prof. H. H. Sommer, Department of Dairy Husbandry, University of Wisconsin,

6:00 р. м.

Banquet and Entertainment.

FRIDAY, JANUARY 21, 1921, 10:00 A. M.
"The Ice Cream Tax," by W. H. Sprague, Chief

Field Deputy Revenue Collector.
"Ice Cream in the Diet for Children," (Illustrated

by Stercopticon Views), by Miss Francesca Kayser, of the Elizabeth McCormick Memorial Fund, Chicago.

"Some Experiences at Sectional Meetings," by 15.

"Some Experiences at Sectional Meetings," by 1: W. Holmes, F. M. Wright & Co., Manteno, III.
"First Impression of New Beginners in the Ice Cream Industry," by Karl B. Mory, Mory Ice Cream

1:15 p. m.

General informal discussion-ice cream members only,

Unfinished business,

Reports of committees,

New business,

Co., Appleton, Wis.

Nomination and election of officers and adjournment.

"RIGHT WAY PLAN"

Shippers in every industry using express service, will be asked to cooperate in the "Right Way Plan," a new educational movement about to be inaugurated in the express business, by the American Railway Express Company.

Special emplasis is to be laid on what is called "Starting express shipments right," in which shippers will be asked to give special attention to compete and accurate addressing of shipments and to the packing rules laid down in the Express Classification, authorized by the Interstate Commerce Commission. The carrier amounces that having received shipments turned over to it in proper condition for shipping, it proposes to see that while in its hands all business will be carefully guarded, and expeditionsly handled to destination. Numerous placards and pamphlets detailing the correct shipping methods will be distributed to express users.

This is considered an opportune time in the express business to call the attention of express employees to proper methods established by the carrier, for the handling of the business. Under the Right Way Plan—selected employees, expert in their individual lines, will take a prominent part in a series of meetings to be held throughout the year, the first of which is called for January 11, 1921.

These men have been organized into Right Way Committees, and the Plan will be simultaneously introduced at every point where express traffic is handled.

GOAT'S MILK ICE CREAM

Ice cream made of goats' milk and flavored with rose leaves is the delicacy par excellence of Greece and Crete, according to an American Red Cross worker recently returned from abroad. To Americans, whose palates are attuned to the rich, creamy product of the Jersey cow, the goats' milk ice cream doesn't sound very delectable. But flavored with rose leaves, it is really delicious, 'tis said. If such epicurean delight can be compounded from the milk of the goat, why not try adding fresh rose leaves to the American brand of ice cream? It might prove as popular as "Caramel Sundae" or "Banana Surprise."

Goats' milk is whiter than cows' milk and ice-cream frozen from it has almost the blue tinge of skimmed milk unless colored by the petals of the rose. Its flavor is peculiar, but to the citizens of Mitylene it has no peer.

REPORT ON SOFT DRINKS

Consumers of soft drinks have paid through the manufacturers of such libations during the last eleven months \$\$1,000,000 to the revenue department of the Government, according to a statement made before the Association of Bottlers of Carbonated Beverages, at its recent Cincinnati convention, by Dr. Carl L. Alsberg, chief chemist of the Department of Agriculture. These figures would indicate that the manufacturers of soft drinks do a business in excess of \$\$500,000,000 a year.

NEW ENGLAND CONVENTION

The annual convention of The New England Association of Ice Cream Manufacturers will be held at the Hotel Garde, New Haven, Conn., February 15 and 16; the first meeting being called at 2 p. m., February 15.

It was originally planned to hold a one-day meeting on February 16, but the executive committee has decided on a two-day convention instead.

-G. W. Kenison, Secretary.

THE ICE CREAM TRADE JOURNAL A practical belper for Ice Cream Manufacturers and a

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THOMAS D. CUTLER 171 Madison Avenue, New York

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OFFICIAL ORGAN OF THE NATIONAL ASSOCIATION OF ICE CREAM MANUFACTURERS. THE NATIONAL ASSOCIATION OF ICE CRAM MARUTACTURES. THE ASSOCIATION OF ICE CRAM SUPERVISOR OF N. Y. STATE. THE ASSOCIATION OF ICE CRAM MARUTACTURES OF N. Y. STATE. THE INDIAN ASSOCIATION OF ICE CRAM MARUTACTURES. THE ASSOCIATION OF ICE CRAM MARUTACTURES OF IOWA. IN ASSOCIATION OF ICE CRAM MARUTACTURES. NEW ENGLAND ASSOCIATION OF ICE CREAM MANUFACTURERS. MISSOURI ASSOCIATION OF ICE CREAM MANUFACTURERS.
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NEW YORK, JANUARY, 1921 NO. 1 VOL. XVII.

The Cost Should Be Shared

The assertion made recently at a state convention of ice cream manufacturers that small manufacturers can not afford to pay the minimum dues to the National Association, while seemingly based on some-

It is useless to argue about that which is a fact accepted by all manufacturers of ice cream, large and small alike, namely, that the National Association is an institution indispensable to the welfare of the industry. This being true, then a fair share of the burden of carrying forward the Association's work should fall on the shoulders of every one benefited and certainly it seems only fair that the dues be proportioned among members according to the amount of business done.

thing like reason, is nevertheless utterly fallacious.

Does any member pay in full for the services rendered by the Association? The negative answer to this question was clearly shown in the reports of the officers at the last annual convention. One item alone more than paid for each membership, namely, the saving effected by the Association's opposition which prevented a larger increase than was necessary in express rates.

Providence has seen fit to have the rain fall on the lands of the good and the bad; likewise the progress and prosperity of the industry made possible largely through the good work of the National Association benefits both members and non-members, while the burden of carrying forward that work falls on a few. If all manufacturers could see the light and be led to carry their share of the burden, the Association's financial resources, with even lower dues, would be so enlarged as to make possible a program that would return many times over the money invested in dues. The National Laboratory which is contemplated is only one of the many progressive steps that could be taken for the benefit of all alike if every manufacturer would accept the obligation which is his whether he recognizes it or not.

The truth is that small manufacturers keep the National Association's minimum dues at a figure they feel they cannot afford by their persistent disinclination to pay any dues at all.

The Real Competition, the act or proceeding of Meaning of striving for something that is sought Competition by another at the same time, has been rightly said to be the life of business. To have this accelerator and regulator of business we must have competitive firms or competitors who have entered into so-called business rivalry.

It is obvious that the "something" these competitors are striving for is business or more business, and it was the rivalry carried too far that gave us the now nearly absolete term, "cut-throat competition." To-day, the meaning of "competitive business" is seen in a new light. The distinction between competition and unfair competition, between rivalry and mad rivalry, is generaly better understood.

In the past, the ice cream manufacturer, as a rule, made every effort to increase his total gallonage, striving by every means to report at the end of the season a larger output than his competitor. To-day, with modern systems of cost accounting, he finds that increase in volume does not necessarily spell success for him, but that his cost per gallon, including delivery cost, is the factor that makes or breaks him.

The progressive manufacturer is not looking for new business where the difference between cost and selling price is not large enough to pay dividends, and to make this additional business a paying proposition he must limit the practical if not actual meaning of competition. Competition still means striving against another or a number of others for the same end but that which is sought for is profitable business and not merely more business.

Consumers having and showing different preferences have proven that no one manufacturer in a

given community makes, in everybody's opinion, the best ice cream, and modern accounting has proven that it is not merely big gallonage that pays profits, Therefore, the progressive manufacturer has ceased to be a mad rival of his competitors; instead he associates and cooperates with them with a view to enlarging the whole business, and fights fairly only for that part of it which he can take on at a profit.

CONVENTION DATES

The Association of Ice Cream Manufacturers of Iowa, January 17, 18 and 19, 1921, at the Russell Lamson Hotel, Waterloo.

The Wisconsin Association of Ice Cream Manufacturers, January 20 and 21, 1921, at the Hotel Plankington, Milwaukee.

Arkansas Ice Cream Manufacturers' Association, January 25, at the Hotel Marion, Little Rock,

The Ohio Association of Ice Cream Manufacturers, February 3 and 4, 1921, at Deshler Hotel, Columbus. The Michigan Association of Ice Cream Mfrs., Feb.

15, 16 and 17, at Hotel Plantland, Grand Rapids. The New England Association of Ice Cream Manufacturers, February 16 and 17, 1921, at Hotel

Garde, New Haven, Conn. The Tri-State Association of Ice Cream Manufacturers, March 8, 1921, at Savanah, Ga,

NATIONAL ASSOCIATION NOTICE Valuation of Inventories

Your attention is directed to the following treasury decisions which supersede the information given in our Bulletin No. 37, dated Nov. 20, 1920, under the heading "Income Tax Ruling."

Valuation of Inventories. Article 1582, Regulations 45, is hereby amended to read as follows;

Art. 1582. Valuation of Inventories. Inventories must be valued at (a) cost or (b) cost or market, as defined in Article 1584 as amended, whichever is lower. Whichever basis is adopted must be applied consistently to the entire inventory. A tax-payer may, regardless of his past practice, adopt the basis of "cost or market whichever is lower" for his 1920 inventory, provided a disclosure of the fact and that it represents a change are made in the Thereafter changes can be made only after permission is secured from the Commissioner. Inventories should be recorded in a legible manner, properly computed and summarized, and should be preserved as a part of the accounting records of the taxpayer. Goods taken in the inventory which have been so intermingled that they cannot be identified with specific invoices will be deemed to be the goods most recently purchased. (T. D. 3108, signed by Paul F. Meyers, Acting Commissioner of Internal Revenue, and dated December 30, 1920.)

Inventories at Market. Article 1584, Regulations 45, as amended by T. D. 3047, is hereby amended to read as follows:

Art. 1884. Inventories at Market. Under ordinary circumstances, "market" means the current bid price presaling at the date of the inventory for the particular merchandise in the volume in which ordinarily purchased by the taxpayer. This method of valuation is applicable in the cases (a) of goods purchased and on hand, (b) of basic elements of cost (materials, labor, and burden) in goods in process of manufacture, and (c) of finished goods

on hand; exclusive, however, of goods on hand or in process of manufacture for delivery upon firm sales contracts at fixed prices entered into before the date of the inventory, which goods must be inven-toried at cost. Where no open market quotations are available, the taxpayer must use such evidence of a fair market price at the date or dates nearest the inventory as may be available, such as specific transactions in reasonable volume entered into in good faith, or compensation paid for cancellation of contracts for purchase commitments. Where, owing to abnormal conditions, the taxpayer has regularly sold such merchandise at prices lower than the current bid price as above defined, the inventory may be valued at such prices, and the correctness of such prices will be determined by reference to the of such prices will be date of the inventory. Prices which vary materially from the actual prices so ascertained will not be accepted as reflecting the market and the penalties prescribed for filing false and fraudulent returns may be asserted. Goods in process of manufacture may be valued for purposes of the inventory on the lowest of the following bases: (1) the replacement or reproduction cost prevailing at the date of the inventory; or (2) the proper proportionate part of the actual finished cost; or, under abnormal conditions, (3) the proper proportionate part of the sales pice of the finished product, account being taken in all cases of the proportionate part of the total cost of basic ele-ments (materials, labor, and burden) represented in such goods in process of manufacture at the stages at which they are found on the date of the inventory. The inventories of taxpayers on whatever basis taken will be subject to investigation by the Commissioner, and the taxpayer must satisfy the Commissioner of the correctness of the prices adopted. He must be prepared to show both the cost and the market price of each article included in the inventory. It is recognized that in the latter part of 1918, by reason among other things of governmental control not having been relinquished, con-ditions were abnormal and in many commodities there was no such scale of trading as to establish a free market. In such a case, when a market was established during the succeeding year, a claim may be filed for any loss sustained in accordance with the provisions of Section 214 (a) 12 or Section 234 (a) 14 of the statute. See articles 261-168 (for losses in 14 of the statute. See arrices 201-108 (the losses in 1918 inventories and from rebates), (T. D. 3109, signd by Paul F. Meyers, Acting Commissioner of Internal Revenue, and dated December 30, 1920.) Bulletin No. 41, January 4, 1921.

CORRECTION

In an address entitled, "lee Cream Cone Possibilities," delivered at the recent Portland convention of the Pacific Ice Cream Manufacturers' Association, C. M. Egbert stated that not less than seven hundred and fifty million cones are consumed aunually in the United States. Upon further investigation Mr. Egbert finds his estimate to be too low and he wishes the second paragraph of his address which was published on page 68 of the December, 1920 issue of THE ICE CREAM JOURNAL, to read as follows:

I believe that I am speaking conservatively, when I estimate that not less than two billion ice cream cones are consumed each normal year. I think this is not an exaggeration, and if only one gallon of ice eream were used for each seventy-five cones. this means that 26,640,000 gallons of ice cream is used annually to fill these cones. It means that about \$34,000,000.00 are added each year to your gross income, as I believe I am safe in saying, that if this ice cream is not sold in cones, it would not he sold at all.

NEWS OF ICE CREAM FACTORIES

Readers are requested to send for this department authentic news of intention to build, improve or add equipment to plants; changes in control, and other items of interest about plants and the business.

CANADA

Sherbrooke, Que.—The Sherbrooke Pure Milk Co., 4 Belvidere St., is at the present time making quite extensive enlargements to its ice cream department, making alterations to its buildings to give more room and adding another room; also installing additional machinery, including a new 13-ton ice machine and another 40-qt. Fort Atkinson freezer. The new improvement will increase the company's daily ice cream capacity from 400 gal. to 1,000 gal. The company is owned and operated by Walter R. Reid and Marcus T. Armitase.

ALABAMA.

Mobile—The King Ice Cream & Creamery Co. plan to install additional equipment increasing its daily capacity to 2,000 gal. The company will also operate a suburban branch distributing station at Prichard to take care of its trade in that territory.

CALIFORNIA.

San Diego—The San Diego Ice Cream Co. has been incorporated with a capital stock of \$50,000. Turlock—Erickson Brothers, of Stockton, Cal., are erecting an ice and ice cream plant in Turlock, Cal.

COLORADO.

Pueblo—The Pueblo Ice Cream Co. has been organized by A. L. Mowry, E. B. Darrow and H. L. Walsmith to manufacture ice cream and frozen prodducts

CONNECTICUT.

New London—Tait Bros. are remodeling their plant making additions at the cost of \$20,000. New machinery is being installed including a new 20ton Creamery Package compressor and Wizard holding tanks.

DELAW ARE.

Wilmington-The Sharpless-Hendler Ice Cream Co. has just completed its new plant, The building. 85 by 115 ft., three stories and basement, is built of reinforced concrete with brick facing. The brick cutting room is in the front of the building and the freezing room faces the side street. The office is on the second floor. This floor also contains the ice making and storage rooms, as well as the sweet cream cold storage. Having the ice rooms on the second floor make possible the transmission by gravity of the ice through the crushers to the trucks below. The machinery installed includes eight Miller freezers, also one 50-ton, one 30-ton and one 15-ton vertical single-acting beltdriven enclosed York refrigerating machines, each arranged for motor drive through Turbo-gear. The refrigerating system also includes a 15-ton raw water flooded freezing system, double pipe brine coolers and still air hardening rooms of the new Schantz type. The plant is controlled with central station power, everything direct connected motor driven, also boilers installed for heating and pasteurizing purposes. The entire work has been done under the supervision of K. W. Schantz, Inc., Buffalo, N. Y. A feature of the plant is the large driveway which will be used both for loading and storing the company's fleet of electric trucks. Thus the trucks can be, charged right where they are loaded, making an additional use of the driveway, namely, that of an electric garage.

GEORGIA.

Atlanta—The Gate Gity Dairy, 138 Edgewood Ave, recently established an ice cream department. The company has purchased the lease on the Georgia Creamery which will be remodeled into a modern ice cream plant. New machinery is being installed including four 15-ton York compressors, 25-ton ice plant with ice elevating equipment, ten C. P. pasteurizers with 1800 gal. capacity, four 40-qt. Fort Atkinson motor driven freezers, two 200-gal. Manton-Gaulin homogenizers, one 250-gal. Davies creamer, one Mojonnier solid tester complete, one Mojonnier overrun tester and brick equipment. A 7,000-gal. hardening room is being installed. The plant will be operated by its owner, J. Harry Helmer, assisted by A. Sansine.

ILLINOIS.

Chicago—The National Ice & Ice Cream Co., 10 S. La Salle St., has been incorporated for \$100,000 to manufacture ice, ice cream and dairy products. The incorporaters are F. B. Marsaw and C. B. Erick-son.

INDIANA.

Gary-The Magic City Ice Cream Co. is remodeling its plant and plans to install new machinery.

La Porte—The Sage Ice Cream Co. plans to install new equipment including a freezer and two 300-gal, holding vats.

South Bend—The Furnas Ice Cream Co, has installed a 600-gal, hardening room and one 25-ton vertical single-acting belt driven enclosed York refrigerating machine and high pressure side complete. Other machinery has been installed including two additional Cherry holding vats and Ft. Atkinson freezers.

IOWA.

Arlington—The Hutchinson Co. recently installed one 5-ton vertical single-acting belt driven enclosed York refrigerating machine and high pressure side complete.

KANSAS.

Ness City—The Ness City Ice Co. plans to install a new ice cream plant in its ice plant,

KENTUCKY.

Leitchfield—The Leitchfield Ice Cream Co. plan in the early spring to commence the erection of an

LOUISIANA,

ice and ice cream plant,

La Fayette—The Louisiana Beverage & Ice Cream Co, plans to improve its plant to the extent of about 88,000. The company recently purchased a 4-ton York refrigerating machine with 2½-ton ice tank and can for same. This machine will be used for a hardening room for ice cream and to manufacture ice for shipping ice cream.

Monroe—The Watson and Aven Ice Cream Co. is spending \$25,000 establishing a creamery here in connection with the company's ice cream plant.

MAINE.

Skowhegan—Skowhegan Jersey Creamery, Messrs. Harris and Packard proprietors, has plans perfected to establish an ice cream plant in connection with its present factory.

MARYLAND.

Frederick-The Nicodemus Ice Cream Co. has been organized with a capital stock of \$100,000.

Hagerstown—The Hershey Creamery Co. of Harrisburg, Pa., has purchased from Jacob Roessner, the property and business of the Roessner Co., an ice cream company established about 30 years ago. This gives the company four ice cream factories with an output of about one million gallons.

MASSACHUSETTS.

Northampton—Tait Brothers, 134 Cass St., Springfield, Mass., have purchased Beckman's iee cream business here. The company will use this plant as a distributing station which will be served from the Springfield factory.

Palmer-The Bridgman Ice Cream Co. plan to install new refrigerating equipment.

Somerville—The Bushway Ice Cream Co. has purchased the wholesale business of the Walter Snow & Son. Inc.

MICHIGAN.

Escanaba—The ice cream plant and creamery of The Cloverland Creamery Co. has been purchased by B. G. Asselin of Norway, Mich. Mr. Asselin plans to install new machinery and equipment.

Minneapolis—J. W. Hayes & Son, 1501 Hennepin Ave, has completed its new fee cream plant, which is 100 by 100 ft., one-story and basement with provision for adding another story. New machinery has been installed including a C. P. 30-ton ice machine, four 40-qt. Fort Atkinson freezers, a Viscolizer, two 1000-gal. and one 500-gal. Elyria glass lined holding tanks. The company also plans to install four more freezers of 100-gal. capacity in the spring. The cost of the new plant equipped is \$110,000.

Shakopee-W. E. Redman has recently opened an ice cream factory here.

NEW JERSEY.

Newark—The Puritan Ice Cream Co. has been organized with a capital stock of \$250,000 by Gustave A. Wiedenmayer and Joseph E. Wiedenmayer. The new company has established a plant at \$56 Market St. on the Lincoln highway, having converted the brewery plant of Geo. W. Wiedenmayer. Inc., into a modern ice cream plant. The main building is five stories and basement, 65 by 65 ft. One brick and two bulk hardening rooms have been installed with \$5000 gal. daily capacity. The refrigerating plant consists of steam driven machines of 145-ton refrigerating and 45-ton ice making capacity.

The power plant consists of three 150 h. p. boilers and two 50 k.w. generators. W. H. List, Jr., is general manager of the company.

NEW YORK.

Collins—The Osborn Ice Cream Co, of Blasdell, has built a new receiving station here for milk. The plant is 40 by 80 ft, built of Dennison interlocking tile and equipped with C. P. pasteurizers and Manton-Gaulin homogenizer.

Syracuse—The Haberle Beverage & Products Co. has been granted a corporation charter by the state of New York authorizing the manufacture, among other things, of ice cream. The incorporators and directors are Frank C. Bielher, Chas. J. Sedwartz, Edward Oswald, Walter Welch, George J. Gannon, Thomas Hogan and B. F. Haberle.

NORTH CAROLINA.

Kinston—Harvey C. Hines contemplates the erection of a modern ice cream plant, 30 by 105 ft., two stories ligh of brick and reinforced concrete construction. Mr. Hines writes that he plans to build a plant of three 40-qt. freezer capacity and he invites correspondence and bids for full equipment.

NORTH DAKOTA.

Lisbon-Messrs. Lowe and Boum have purchased an ice cream plant here from W. E. Redman.

OHIO.

Defiance—The ice cream factory of Weber & W. C. Hopkins, L. W. Hopkins and F. V. Tharp. The new owners will operate the plant under the name of Defiance Ceream Co. New machinery has been installed increasing the daily capacity from 100 gal. to 350—31

OKLAHOMA.

Chickasha—F. A. Botts, of Chickasha and Marshall Brothers, of Dallas, Texas, have purchased O. W. Walden's interest in the Chickasha Ice Cream Co.

Muskogee—The Muskogee Creamery contemplates installing a new freezer and other ice cream equipment.

PENNSYLVANIA.

Bethlehem—The Meyer-Heiberger Ice Cream Co., 67 Goepp St., has changed its name to the Meyer Dairy Co. and the capital stock has been increased from \$50,000 to \$500,000. The company plans to build a new milk plant soon. The company will continue manufacturing ice cream.

Lancaster—The Hershey Creamery Co., of Harrisburg, has purchased the ice cream business of G. B. Marrow. The Marrow business has been established for more than twenty years. Mr. Marrow has been made director in the Hershey Creamey Company.

Pittsburg—The Tech. Food Products Co. has been organized with a capital stock of \$750,000 for the manufacture of ice cream by T. L. Croteau, M. A. Bruce and S. E. Dill.

TENNESSEE.

Knoxville—The Mono Service Cream Co., 400 Chamberlain St., plan to erect a four-story and basement addition, 70 by 98 ft., to its plant. TEXAS.

Galveston—The Galveston Ice Cream Co., 1021 Tremont St., has installed one 9½-ton vertical singleacting belt driven enclosed York refrigerating machine and high pressure side complete.

Orange—The Milk Products Co., of Port Arthur, will soon build a new plant here.

VIRGINIA.

Norfolk—The Horn Ice Cream Corp, has been organized and has purchased the Jersey Cream Corporation's ice cream plant at 22nd and Llewellyn Avenues. The officers of the new company, which will operate under the name of the Horn Corporation are: President, H. W. Hofferbert; Vice-President, L. J. Upton; Secretary, John Upton, and Treasurer, Vermon Bluford.

WASHINGTON.

Tacoma—The Olympic Ice Cream Co. is constructing a modern cold storage plant to cost \$175,000.

WISCONSIN.

Beloit—The Consumers Milk Co. plans to install new equipment including a 20-ton compressor and 500-gal, mixer.

Jefferson—Heilemann & Co. has opened a modern ice cream plant here with a capacity of 600 gals. per day. The plant is equipped with a Kroeschell ice machine of twenty-ton capacity. The ice cream equipment was furnished by The Creamery Package Mfg. Co.

Stevens Point—The Mory Ice Cream Co., of Appleton, has secured a five-year lease on a brick factory building here and in the near future will open up a modern ice cream factory.

ECONOMIC SOCIETY DIVIDED

In an address before the Industrial Relations Association of America, P. W. Litchfield, vice-president of the Good Year Rubber Tire Company, stated that:

By the process of historical development we have come to a threefold division in the economic organization of society—employers' associations, labor unions, and the public. These three are not constructive when acting alone. They must act posether

ration of bound of the control of th

In industry, as in politics, we have different forms of government now in operation. We have the autocratic form, which is a heritage of the past. Sooner or later this form breaks down under the strain and then strikes and labor troubles seem to overwhelm us.

In our present form of industrial organization management must be responsible to both labor and capital. The appointment of managers should be by those who furnish capital for industry but there should be restrictions on managers so that they cannot use autocratte power to the detriment of labor. On the capital capit

In the past, management has paid too much attention to tools and materials and not enough to the development of man power. Any industry that grows in size must spend time in the development of its man power if it is to function properly.

We saw this in the rubber of industry, so we were coutside of the industry brought in men and trained them in the business. It is necessary to develop the physical automatical welfare of the employees and to give them a broad vicwpoint of industry. It is important to win their interest and their hearts in order to have the most satisfactory

organization.

These days, the men think that they should have repersentation in the management of those things in which they are interested. Moreover, they want the opportunity of getting what they produce. Labor wants to share in the gain of industry after allowing a return to capital commensurate with the risk involved. The working men desire to acquire proposed.

It is the duty of the personnel manager to understand what the men want and to organize industry on this basis. The spirit of the organization is the thing that counts. No set form of organization should be attempted. The personnel manager should be ready to make any necessary modifications that seem advisable.

BUYING MILK BY MEASURE

In Milk Plant Letter No. I, issued in March, 1914, the question of buying milk by measure or weight was discussed. At that time a large proportion of the milk plants were buying by the gallon or can measure. Of 87 plants visited in four of the larger castern cities, 60 were making no attempt to weight the milk. While the proportion of dealers who are using the weight system is much larger now than at that time, yet a large number of dealers still use the can measure system of determining the quantity of milk received from the producer. Many milk producers are opposed to selling their milk by weight, and will if possible sell to dealers who do not weight the milk.

The farmer should receive full credit for all milk slipped, but the aim should be to use a system that is accurate and fair to both parties. Naturally the dealer does not want to pay for more milk than he receives, and the farmer wants to receive payment for the full quantity of milk shipped.

In a recent investigation carried on by this Division some interesting data was obtained which illustrated the inaccuracy of the system of determining the quantity of milk received at the plant by the can measure system alone. Observations were made on a total of 346 shipments of milk consisting of 1,102 cans. The cans of milk were examined on arrival at the plants before they were dumped into the weigh cans. The quantity of milk by measure in cans that were not full was estimated by means of measuring sticks, so that regardless of the quantity shipped by the producers and the amount lost before the milk reached the plants, an accurate check was made upon the fullness of the milk cans before they were emptied into the weigh cans. The difference between the quantity of milk dumped, as determined by can measure, and the actual quantity received, as shown by the scales was 116.6 gallons or a different of 1.88 per cent., viz: The quantity received in 1.102 cans according to can measure was 6,185.32 gallons, This amount actually weighed 521,910 pounds and figuring 8.6 lbs. to the gallon would make 6,068.72 gallons received, a difference of 116.60 gallons or 1.88 per cent.

Thus the difference for the total quantity of milk received was 116.60 gallons, or 1.88 per cent. This difference was no doubt due primarily to the poor cans that were used. It cannot be expected that dented and battered cans will hold the full amount. One shipment of six full cans supposed to hold 30 gallons held only 28½ gallons as shown at the weigh can. These cans were old, and were badly dented and battered.

In justice to the farmer at plants where milk is weighed, the scales used should be tested from time to time for accuracy, and the milk should be well drained from the cans into the weigh can.—Nilk Plant Letter No. 80, U. S. Den't, of Agriculture.

CHICAGO FAVORS TRAILERS

Amendments to the traffic ordinance in Chicagehave been drafted to be submitted to the city council with a view to preventing rapid destruction of the street pavements by excessively heavy traffic. The proposed changes were discussed at a recent meeting in the office of the city engineer, Mr. Combs, who is chairman of the special traffic commission charged with drafting the amendments. It is proposed to change the gross weight of vehicle and load from 40,000 pounds, as at present allowed, to 30,000 pounds, with a maximum weight of 1000 pounds per inch width of tire, but it was agreed at the meeting that the combination of a truck and semi-trailer with load should be allowed a weight of 32,000 pounds, with a limit of 24,000 pounds on any one axle.

During the meeting the city engineer said he was very much in favor of the use of trailers and felt it was preferable to have loads spread over the six or eight wheels of a truck and trailer or semi-trailer rather than to have the weight concentrated on the four wheels of a truck carrying the load alone.

TRADE NOTES

The Creamery Package Mfg. Co, recently moved into a new branch office and warehouse at 1408-10 W. Twelfth St., Kansas City, Mo.

The Brooks Cabinet Co. recently moved from Fowblesburg, Md., to Norfolk, Va. The new address is 1000 block W. 27th St., Norfolk, Va., where the company has just completed a new building, 85 by 100 ft., which is being equipped with modern machinery for manufacturing ice cream cabinets.

The Mohawk Condensed Milk Co, has been incorporated with a capital stock from \$1,000,000 to \$3,500,000.

CATALOGUES, ETC.

The Paterson Parchment Paper Co., Passaic, N. J., recently published an illustrated booklet entitled, "Demonstrator for Paterson Parchment Wrappers for Ice Cream Bruck."

WANTS, FOR SALE, ETC.

Advertisements under this head, six cents a word each insartion, classification head and address not to be counted. Minimum charge \$1.00. Remistence Muss Accompany Order. Halp and situation want ada will be given on insertion frea.

SITUATION WANTED—By all around milk man; understands all milk machinery, including condensing and making fee cream mixes. Addless C. J., care THE ICE CREAM TABLE JOURNAL.

SITUATION WANTED—As manager or sales manager of ice cream plant where a eagable, energetic man is desired. Have made a flose study of ice cream sales and factory in the south and should you have either of above positions open by March I would be pleased to give references and arrange interview. Address J. S., care The Ice Cream Trade Distributed.

STREAT LOW WATER—Chemist, managerial ability, age 10, now their doctoms in condensed milk factory, first class, ether ist and Mojonnier operator, etc. if the condense the milk business. Would work on salary basis or would invest in a laboratory with right parties. Address Chemist, care Thus IEC CERM TRADE JOURNAL.

SITUATION WANTED—By an experienced ice cream and syrup maker; nine years' experience; can give best of reference. Harry Sanker, 874 E. Rorkdate, Avondale, Cincinnati, O.

SITUATION WANTED—As manager of ice cream plant, 20 years' experience. Fancy work a specialty. Best of reference, Address M. J., care THE ICE CREAM TRADE JOURNAL.

SITUATION WANTED—As manager or superintendent of production or ice cream maker. Have had years of experience both as ice cream maker and in an executive capacity and understand the business. Address S. L. D., care This Lie Cream Takada Jouanal.

SITUATION WAYEZD—By graduate civil and mechanical engineer, age 35, as manager of production and sales of ence with ammonia in the two industries; understand pasteurizing, mixing, viscolizing, etc. Abbity to handle men mixer and freeer if in needle. Open for position after lamany 1. Salay per year, 33,200,00. Address Manager E. G., care True I Let Care Marso Dovsha.

SITUATION WANTED-By ice cream maker with ten years' experience; familiar with pasteurization, homogenization, etc. Address W. E., care The Ice Cream Trade Journal.

SITUATION WANTED—As salesman for supply house; have seven years' experience making ice cream; 28 years old; good education and appearance. References on request. Address L. D., care The Ica Caram Tande Johana.

SITUATION WAYER—On account of tale of plant where now employed, a manager who has had practical experience in all departments and who is up to the minute in all the latest methods of iee cream production, wants a position that the product of the

SITUATION WANTED—By an ice eream and buttermaker with 20 years' experience in that line of work; an American, 35 years old, married, capable. Can come at once. R. K. Carver, 814 N. Main st., Lima, Ohio.

SITUATION WARTED—As foreman by man with 15 years' experience in all branches of the ice cream business; a good leader; able to get results, turn out the goods as they should be and considers his employer's interest his own, Address J. H. D., care The Ice Casam Tabade Jounsal.

SITUATION WANTED—By man with eighteen years' experience in ice cream; fully understand the business; pasteurizing, homogenizing, viscolizing and refrigeration; ability to handle entire plant and get results. Address Permanent, care The ICE CREAM TRANK JOHNSML.

STRUATION WATER—College graduate thoroughly trained in the free cream name are not attended to the free cream dairy industry desires resiston as actual many or taking charge of manufacturing cits. Five years' experience in uploadate plant. Address P. D. B., care THE ICE CREMT PLAND JOURNAL.

Struction Waster-University readunts of 1905. Decree of chemistry and hasteriology specialist in dairy products, confessed milk and milk jeowder, desires connection with a high grade form along executive or production lines. At present in responsible position with a large milk powder concern. Address V. J., care Tun Lee Canan Traco

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- STUATION WARTE.—As foreman or augmintendent by a first class fee command, damm with. If years experience, and plain creams; also can handle all up to date machinery and plain creams; also can handle all up to date machinery in either line. Married and can furnish best of reference, Address O. Wallace, 239 S. Adams St., Green Bay, Wis.
- SITUATION WANTED—A thoroughly up-to-date ice cream wishes to connect himself with a first-class plant. As G. W. K., 833 Walnut St., Cincinnati, O.
- STEVETON WATED—As manager or assistant manager by an excepted young married name with pactical returning in modern see eream factory, including selling, shipping and manufacturing. Familiar with mort tracks, pasteurizers, homogenizers, refrigeration, etc. Address Progressive, care True les Ceram Tanae Journal Tanae.
- SALEMAN WANTED—Experienced salesman wanted to sell flavors, marshmallow topping, etc. Give references and full details in application. Address E. O. S., care The ICE CRAN TRADE JOURNAL.
- SALESMAN WANTED—Calling on ice cream and milk companies to handle our product as sideline. Quick sales; good commissions. Address P. J., care Title Ike Verkam Trade. JOURNAL.

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- HELF WANTED—First-class man capable of taking entire charge of manufacturing department of an ice cream factory. Would prefer university graduate, who has had some puscitical experience. Address V. A., care The Ice CREAM TRADE JOURNAL.
- HELF WANTED—Capable man who understands the manufac-turing of rec cream mixes. Must know modern melitods. Year round position for the right man. Since experience and reference in answering. Address B. B., care THE LE CREAK TRADE JOURNAL.
- HELP WANTED—Ureametyman with ice cream experience. Splendid opportunity for advancement. Give reference, experience, salary expected in first letter. Address Pennsylvania, care The Ltd. Cream Thore Journal.
- HELP WANTED—First-class ice cream maker wanted for a small plant in a live town; year round job; none but first-class man need apply. Address Nectar Products Co., Webster, Mass.
- Heter Wanter-First-class ice cream maker wanted for mod-ern ice ercam and milk plant; have latest equipment. An elegant opportunity for a live wire. Nate age, married or single; references and salary desired in first letter. Ad-dress Bennett's Creamers, Nebouville, Ohio.
- HELP WAVETE-Lee ceam maker, capable of setting results with bring freezer, must be industroom and willing to follow instructions. Steady work for the right man with fine change for advancement. Stage fully in first letter expected; also age and whether married or single. Address R. E. C., care THE IG CHANT TABLE DELINAL.

HELP WANTED-High class man who has sold ice cream to supervise other salesmen for large manufacturer. City and

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SCOTTANT—J. E. Weir, London, Ont.

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country. State salary desired, age, married or single, ref-rences. Address Y. Z., carc THE ICE CREAM TRADE Iouanal.

HELP WANTED—Permanent position as assistant foreman for ice cream maker who can handle motor driven freezers in large factory with big production. State age, married or single, wages desired, references. Address V. W., care THE I.E. CREAM TRADE JOUNNAL.

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HELP WANTED—Man to operate freezers in city of Eastern Pennsylvania. Fine modern plant. Experience in high-class retail as well as wholesale necessary. Address M. K., care The I're Caram Trade Jounnal.

For Sale—A four-hundred gallon Progress homogenizer.
Practically as good as new. Will make attractive price on same. Alamito Dairy Company, Omaha, Ncb.

For Sale-Two round twin Miller mixers in good condition,

300 gallon total capacity, on one base. No reasonable offer refused. Also 250 high five gallon cans, second hand. Make offer. Russ Brothers Ice Cream Co., Harrisburg Pa.

American Control of the Control of t

For SALE—Ice cream tub factory equipment located at Me-chanicsburg, Ohio. Going business and equipment consist-ing of new Allis-Challmers motors hoop drivers, woodwork-ing machinery, lumber, hoop stock, handles, etc. Building in which above factory is located can be had on long time

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lease. Products Nationally advertised and business promises tremendous growth in immediate future. Must be sold on account of death of the owner. For further particular address E. J. Maugans, care A. L. Shaw & Co., Mechanicaburg, Ohio.

For Asia—170,000 butter errors marked "Perished" in animal of Technery, 14 sounce package, also to found to the animal of Technery, 15 sounce package. Make us an older, 40,000 %pt milk bottee, plain, no name, 8.50 per green with 1 h.p., 220 with 2phase, 60 eyyle motor attached, 3100,000. Unit trainery Package Mg Co. filler No. 691, pasterriring val No. 2011 with due coil, \$200.00. In 10 pasterriring val No. 2011 with due coil, \$200.00. Mill liw Kream Co., Wwo, Texas.

FUR SALE—One Davis tubular cooler, 20 pipes high, 6 feet long, upper and lower troughs complete. In first class condition. Price \$125.00. Sidebottom Pure Ice Cream Co., Nashville, Tenn.

For SALE-Four ice crushers; first class condition; cheap. The Hanselman Candy Co., 141 E. Water st., Kalamazoo, Mich.

FOR SALE—Two forty-quart United States heave duty ice cream freezers, good as new, only two months in use. Reasonable price for quick buyer. Address A. G., care The Ice CERM TRADE JOURNAL.

For Sax — Two ice cream freezers; one late model, belt drive Miller, not two years old, and one Tyon, host in perfect conditions: one 10 hp. motor and starter, one brine box, pump, crusher, with all necessary polleys, shatting, hangers, \$1,000.00 cash. T. Fellows Mason, 103 Bloom st. Danmore, Seranton, P.

For SALE—One horizontal steam hoiler 20 h. p., one Hor steam engine, one steam pump, lot of fixtures, all in Al condition, lot of sheet and granulated cork or will exchange for ice cream machinery. Lewis Bros., Parksley, Va.

FOR SALE—Will sell four 500-gal, and one 250-gal, Wizard agriators, with or without mutous. Brever Ice Cicam Co., Eighth and Cumberland sts., Philadelphia, Pa.

For Sale-Six new Cherry Model "I" 60 qt. freezers, two Tyson 40 qt. and one Miller 40 qt. freezers, all motor driven. Rich Ice Cream Co., Buffalo, N. Y.

For Satz—Immediate shipment on ice making plant convising of new ice tank, made of steel, complete with 115-300 lb. ice making cans, frame and covers and insulation, h-and new one year and possible of the competence of the compe

For SALE—Three 40 qt, upright C. & B. improved freezers, complete with copper cans, good condition, chean Also 500-5 gallon tubs newly repaired and painted \$3.00 each. The Hutchinson Co., Cedar Rapids, Iowa.

For Sale-Miller 40-quart brine freezer with brine hox and pump. All in good condition. C. H. Geiger & Son, Corry, Pa.

For Sale—Three 40 qt. Miller motor driven freezers, 220 volts, 3 phase, 60 cycle. Now in use, good condition. Submit bid for one or all. Union Ice Cream Co., Nash-

For SALE—Having closed our plant we offer subject to prior sale one 150 h. p. water tube boiler, heavy were latter to the prior party of the prior party prior prior prior prior prior prior prior 635.00; one 130 h. p. 110ppes open exhaust water heater, fine shape, for \$35.00; one 100 h. p. exhaust water heater, fine shape, for \$35.00; one 100 h. p. exhaust water

RE-TINNING

Ice Cream Cans re-tinned at your plant. Cost cut ONE-HALF

No crates to build No freight to pay

SATISFACTION ASSURED

Callender Soldering Process Co. 14 So. Jefferson St. Chicago, Ill. heater, \$125.00; one 20 ton Wolfe Linde refrigerating machine, steam driven, can be belt driven with high pressure side complete for \$1,200.00; one 8 ton ice tank 88.300 lb-cans complete with York fittings for \$1,500.00 Address H. Roth Brewery, Monongahela, Pa.

WASTED TO BUS-One Manning ice cream can washer, steel body, direct motor drive; one Jensen can driver and sterilizer No. 6 A. Address C, care The Ice CREAM TRADE JOURNAL

WANTED TO BUY-Two icing-up bodies for two-ton Mack tricks. Must be in good condition. Address M. K., care The Ice Cream Trade Journal.

Waxred to Buy-Will pay eash for second hand 8 to 10ton ice machine with complete equipment. Give tull particulars and price in first letter. Mory Ice Crean Co., Appleton, Wisconsin,

WANTED TO BUY-300 to 500 gallon vats, ice cream freezets.

Must be in good condition. State price, age, make in reply.

Address Pennsylvania, care Time let (REAM TRADE JOURNAL)

A contract by one for a specified sum, to discontinue his business in a certain city and not to reengage in it, so long as the other contracting party maintains its plant, is held void as in general restraint of trade in the Alabama case of Pearson v. Duncan, 73 So. 406, 3 A.L.R. 242, although by separate contract the latter purchases the implements which the former used in the busingess.

There are three kinds of boiler elliciency: First, the standard of performance which good design, conscientious firing and the best of maintenance would make possible; second, that efficiency which the operator thinks he is getting, and third, the actual facts, namely, the true operating performance as judged by the pounds of steam per pound of total coal consumption,

Guaranteed Rebuilt Used Equipment at Bargain Prices

5,000 Jr.ph. new raised bottom cans with 16ds, 11.25 cach; 2,500-cal. motor drive, Wilard wats, utilified white enamied Jackels, motor drive, 1500 cach; and 1.2, and the property of the prop

Send for complete list and details,
PHILADELPHIA RETINNING CO.
North Philadelphia Pennsylvania

Milk and Ice Cream Cans Retinned

Our methods and workmanship guarantee satisfaction and save money for you.

Give us a trial and send for price list

American Retinning Co. 819-23 N. Lawrence St., PHILADELPHIA, Pa

The Davies Improved Creamer



MALDEN ICE CREAM CO .. G. P. Kimball, Pres. and Treas. Manufacturers of Ice Cream and Fancy Ices.

FACTORY: 43 Exchange Street. Tel. Malden 2730-W. STORE: 229 Pleasant Street. Tel. Malden 2730-R. MALDEN, MASS., Sept. 3, 1920.

THE MANTON-GAULIN MFG. CO., Boston, Mass.

Gentlemen:
After an extensive study of the different emulsifiers on the market, and the state of Gentlemen:

Very truly yours,

MALDEN ICE CREAM CO. (Signed) G. P. Kimball.

The accompanying photograph was taken in the Plant of the Malden Ice Cream Company, of Malden, Mass., and shows their method of handling the mix. The mix is made up in a vat from which it flows to the Davies Creamer by gravity, the discharge being piped to the cooler located on the next floor. This progressive concern enjoys the reputation of putting out an extremely high grade product. Their choice therefore of a Davies Creamer in preference to any other type of emulsifier is just one more reason why you should investigate its merits thoroughly before ordering emulsifying equipment.

The Davies Creamer is daily doing excellent work for many satisfied users and will, given the opportunity, do the same for you.

Through its use a smoother heavier bodied and richer tasting cream may be made and all worries of a possible shortage forgotten.

Write for our catalogue.

Fully Protected by Patents Manton-Gaulin Mfg. Company, of Boston

GENERAL SALES AGENTS THE CREAMERY PACKAGE MFG. COMPANY

CHICAGO, ILLINOIS, 61-67 W. Kinzie St. KANSAS CITY, MO., 931 W. Eighth St. MINNEAPOLIS, MINN, 318-320 Third St., N. BUFFALO, N. Y., 132-137 E. Swan St. OMAHA. NEE, 113 S. Teath St.

PHILADELPHIA, PA., 1907 Market St. PORTLAND, ORE., 6 and 3 N. Front St. SAN FRANCISCO, CAL., 699 Battery St. TOLEDO, OHIO. 119 St. Clair St. WATERLOO, IOWA, 406 Sycamore St.



Get Your Retailer's Viewpoint

Here's what they say about putting your product in SEALRIGHT CONTAINERS

"They are neat, sanitary and attractive. Easily handled. No over measures as in the ordinary pail. People like to carry home ice cream in Sealright Containers—there



is no leaking or dripping—ice cream keeps better and naturally we make a lot of 'carry home' sales we wouldn't otherwise."

Look for the name SEALRIGHT

It's stamped on every container for your pro-

Scalright Containers—the ideal, perfect delivery package—just naturally stimulate ice cream sales. Shouldn't you investigate?

Order Thru Your Jobber, Write Us For Samples.

SEALRIGHT CO., INC.
FULTON NEW YORK

In Your Creamery or Hardening Room—

Jamison's "Noequal" Revolving Door

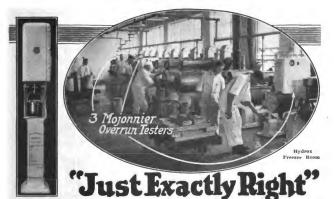


Passes your ice cream and milk cans back and forth without loss of temperature—requires but one operator when fitted with unloading device. Great saver of time and labor—specially constructed for constant hard service. 20 and 40 quart sizes in stock. Ask for catalogue No. 9 with full details.

JAMISON COLD STORAGE DOOR CO.

Formerly Jones Cold Store Door Co.

Hagerstown, Maryland, U. S. A.



says the big HYDROX COMPANY, CHICAGO

when referring to their ice cream as it is drawn from the freezers.

To quote:—"In order to get it JUST EXACTLY RIGHT, we have a sensitive bit of mechanism which says to us, 'Take it out now' or 'Leave it a minute longer.

This "bit of mechanism" is the Mojonnier Overrun Tester, of which they now have three.

They also see that their mix is JUST EXACTLY RIGHT, when made up. They accurately test their materials for fat and solids and then standardize their mix to a few hundredths of one per cent.

This they do with the Mojonnier Milk Tester. They have proved that accuracy pays.

Let our Engineering Department prove it to you.

Write for circular and charts.

Sold direct or through your Jobber Eastern Office

200 Fifth Avenue New York

MILK ENGINEERS 739 W. Jackson Boul. Chicago

Southern Office 1931 Margaretta Avenue St. Louis

Western Office 2679 McAllister Stree San Francisco, Cal.





In the spirited demand for better looking cartons, Menasha Printing & Carton Company has more than kept pace — It has led the way.

has more than kept pace—it has been newsy.

Today we are printing on borboard stock, designs that are unsurpassed anywhere for artistic class and beauty. That's why the Menaha imprint is found on an increasing number of Ice Cream Cartons each year in all parts of the United States.

To be sure of having your next years supply of cartons when you want them, order early. There are some special advantages in ordering now. We will be glad to tell you about it.

MENASHA PRINTING & CARTON COMPANY

MENASHA

CHICAGO 1132 Conway Bldg. NEW YORK

WISCONSIN CLEVELAND 755 Hippodet Fidg., Annes

KANSAS CITY 307 Scarriet Bldg., Arcade

LOS ANGELES-AD L. W., Hels

"The De Laval Emulsor Enables Us to Take Care of Any Amount of Business"

That is what one user says of the De Laval Emulsor, and it is but one of the reasons why it should be made a part of your equipment. The extra profits you can make by having an unlimited supply of cream always available will often pay for the machine in one season.

Here is an excerpt from a letter written by the Hagerstown Ice Cream Co., of Hagerstown, Md.:

"We have been using a De Laval Emulsor for some time and are getting very satisfactory results. The Emulsor has enabled us to greatly improve the quality of our ice cream, both in texture and flavor, and we are in a position to take care of any amount of business on short notice.

"We have been using De Laval dairy machinery for eight years and, like your other machines, the Emulsor is mechanically perfect."

A De Laval Emulsor gives you entire control of your cream supply, both as to quantity and quality. In addition, it makes it possible to obtain your supply of cream at a lower price, and improves the quality of your product.

Send to nearest sales headquarters for Emulsor Catalog and Testimonial Book, "What users say,"

The De Laval Separator Company

New York Chicago San Francisco
Montreal Peterboro
Winnipeg Edmonton Vancouver

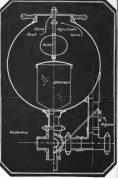


Sooner or later you will use a De Laval

THE C-B CALENDER



Freezing Room of J. M. Fries Ice Cream Co., Reading, Pa., equipped with Thomas Batch Measures.



Save Labor with Thomas Batch Measures!

The men formerly needed to fill freezer hoppers can be transferred to other work after you equip your plant with Thomas Batch Measures. That means operating expenses reduced. For every 5 to 8 freezers equipped with the Batch Measure one man can be dispensed with.

Filling Batch Measures (instead of hoppers) when you have a freezer room like the one in the photograph, takes less effort than to start the freezers running just turn the cock valve lever. The mix flows into the Measure and reaches the freezer without having been exposed anywhere along the line.

These Measures may be placed on any make freezer, any size. The quantity of mix automatically measured for each freezing may be regulated as desired. The float, shown in the drawing above, may be adjusted up or down on the shaft, so that the amount of liquid required to raise the float and shut the air valve can be just what you wish. When the air valve closes the flow of mix is checked. Thus is prepared automatically an exact amount of mix ready for the freezer. By turning back the cock valve lever, the measured mix flows into the freezer.

The Thomas Batch Measure is the only apparatus providing a sanitary, unexposed system. Its cost is an investment. Mix is saved; time is saved; labor is reduced; inaccuracy is done away with.

Make your freezer room modern, sanitary and better looking by installing them. Let us tell you the whole revolutionary story. Write.

CHERRY-BASSETT COMPANY



Excerpt from a Full Page Hydrox Company Advertisement in the Chicago Daily News, Tuesday, October 12

The freezers in themselves are worth telling about—although there isn't room here to show the big roomful of them. Some make ten gallons of ice cream in fifteen minutes—some of them THIRTY gallons. These giant freezers are made for us by the celebrated EMERY THOMPSON COMPANY OF NEW YORK. And when they get to going good, on a busy day! Oh! Boy!

Write for Catalogue

Emery Thompson Machine & Supply Co.

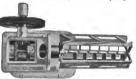
271-275 Ryder Avenue

(6-8 Canal Place, Bronx)

New York City

Buy Your Freezer Now Don't Wait for the Rush!

DELAYS in delivery cannot be avoided when everybody wants their freezer at the same time just before the opening of the ice cream season. Act now, and get that serene sense of security which comes with knowing that you are all ready for business any time the Spring demand comes around.



disengagea antire rive for removing and cier rugged construction of the drive Note the heavy shafts and housing.

The U.S. Heavy Duty Freezer A Pioneer of Progress In Construction and Design

The U. S. Heavy Duty Brine Freezer produces the most perfectly smooth, velvety ice cream possible.

It not only offers you the most for your money in materials and workmanship, but also gives you the very latest improvements and the highest developments in ice cream freezer design and operation.

ADVANCED FEATURES.

Almost all of which are to be had only in U.S. Heavy Duty Freezers. Some of these advantages are optional. Freezers. Some of these advantages with Many come as standard equipment with every machine.

With every machine,
with every machine,
with every machine,
which save money in power, and add to the
life of the machine. They demand little attention, require
the save machine. They demand little attention, require
the save machine to the save machine and automatically controls the size of the batch.
Widest and mack complete range of sizes, including Commercial
to count, Majoriti to quart, Also-leve quart, Referents 120
The Largest lev Cream Preseer in the Weekl, the 160 q. Glant,
can be had in a U. S. Heavy Duty Brite Preseer.
Aspekt Neverland Discharge avoids need of watching and wasteful

Rapid vertical Discharge avoids need of watching and wasteful Whilpping Device features illustrated to left. Precooling increases productivity of labor, saves power and time. Multiplies expacitly of machine. Some power and several production of the production of t

Adjustable motor table which makes it easy to take up the incircle inchainty converted from best to motor drive, and vice verse facilities of business, by ordinary mechanics. Sharfs, bearing size of business, by ordinary mechanics, sharfs, bearing and gears of the U. 8. Freeer are more solid and heavier than in any other machine, wold closering and response of the state of the st

A REALLY HEAVY DUTY MACHINE THROUGHOUT. Get our circular on "How to Tell a Good Freezer."



The cover of the cylinder is taken off by simply unscrewing four milied nickel-plated nuts. These are built into the cover so they cannot be interchanged misthey cannot be interchanged, mis-placed or get dirty. In the larger mackines the cover is hinged. See the removable tripod which holds the front end bearing of the spaddle, it can easily be re-placed by snother should the bearing become worn.

THE U. S. FREEZER & MACHINE CORP.

Home Office and Factory 270 Union Avenue

Brooklyn, N. Y.

Representatives and distributors in all parts of the United States and Canada. May zee not arrange to have one call on you?

CAN-PRO-CO



THEY'LL COME BACK

Can-Pro-Co Stay On Canvas Tub Covers cannot accidentally beremoved from an ice cream tub.

They are fastened, at the back, directly to the tub by means of a loop of heavy rawhide and a brass dee.

The brass will never rust and the rawhide successfully stands the strain placed upon it as a hinge.

When once fastened to the tub, they will "stay on" and come back with the tub, every time. And they will do that for many seasons.

CAN-PRO-CO STAY ON TUB COVERS

Can-Pro-Co Stay On Tub Covers are made complete in every detail. The eyelets are brass bound, and the canvas itself is reinforced with heavy patches where the greatest wear comes. Brass tipped, hard finished strings are furnished with the cover, together with brass staples for attaching to the tub.

Can-Pro-Co Stay On Tub Covers are made of the very highest grade canvas, with double sewed seáms. Before being cut they are thoroughly shrunk, and specially treated by our own process to make them proof against brine, water, mildew and rust. By their fastenings they are also theft-proof.

Once on a tub they are on to stay. A long list of satisfied users is ample proof of this. Ask us for their names.



Order From Your Dealer

Canvas Products Corporation FOND DU LAC, WISCONSIN



The Can-Pro-Co Apron is waterproof and pliable, and allows freedom of movement of the worker.

Write us for a trial order to be shipped through your own dealer.



ALL STYLES AND SIZES OF ICE CREAM FREEZERS

STEEL PACKING CANS CEDAR TUBS ICE BREAKERS BRICK CUTTERS

Repairs for V. Clad & Son Machinery

THOS. MILLS & BRO., Inc.

Confectioners, Bakers and Ice Cream Tools 1301 N. 8th STREET, PHILADELPHIA SEND FOR CATALOGUE OF ICE CREAM TOOLS







Ice Cream Can Liners

Four Good Reasons Why You Should Use

Allen's One-Piece Sanitary Can Liners



- It is Practicable—the only liner which embodies the one-piece feature, which always insures a neat liner that does not work out of place.
- It is absolutely sanitary—made of solid manila board, especially treated to withstand moisture, and will not break down, scrape off or adhere to contents of the package.
- It is economical—prolongs the life of your cans, make old, rusty, and dented cans as serviceable as new ones and more sanitary.
- It is good business—gives your product a clean, wholesome appearance which always increases the demand for your brand.

If not for sale by your Jobber, write to

THE ALLEN CANDY CO., Sole Manufacturers, Pontiac, Ill.

RETINNING AND MILK CANS

TURN YOUR RUSTY CANS INTO GOLD

Why discard an ice cream or milk can or any tinned can or kettle which is all there except the protective coating.

Our process of re-tinning puts on a heavier coat than the can had originally, so you have better can equipment at a fraction of the cost of new cans.

We straighten and repair your cans and tune up the shape, restoring all the original value of the can.

Send us a sample today and we will retin it gratis and return to you at once to show you our class of work and also, how much gold you can save.

SANITARY TINNING & MANUFACTURING COMPANY
3753-3759 E. 93rd Street Cleveland, Ohio

Southern Tinning Company Johnson City, Tennessee

We Offer:

Prompt Service The Best of Work

The Only Retinning Plant in the South



RETINNING ICE CREAM CANS

A Special Department We do refinishing of old ice cream cans in a special department of our plant which devotes its entire time throughout the year to doing this one thing and doing it well.

Old Cans
And we do know how to fix up your otherwise hopeleasly rusty old cans so
Made New
At Low Cost
AND PAYS YOU A DIVIDEND. The government recommends retinning
of old cans as a measure of economy.

Sample Can Retinned Free This is the time of year to send cans in for renewal. Send us a sample can NOW. We will repair and retin it without charge and return it promptly, so you can see the quality of our work. Write us when you ship it, so we will know whose it is, and we will do the rest.

OAKES & BURGER CO.

ESTABLISHED 1873

CATTARAUGUS, N. Y.

Business Personality

The jolly innkeeper of other days was more of a salesman than we give him credit for. He knew the value of personality.

Thousands of stores the country over are by the use of



providing that distinctive, wholesome cleanliness, which creates not only personality, but also that store character and personal touch to which the public so readily responds.

Wyandotte Sanitary Cleaner and Cleanser is a dry, white powder conveniently packed in kegs and barrels, and every particle of the cleaner is guaranteed to be an efficient working particle. Moreover, the widely increasing use of this cleaner is conclusive proof of



in ever

its unusual economy.

Order from your supply house.

It cleans clean.

THE J. B. FORD CO., Sole Mfrs. Wyandotte, Mich.





Pioneer Retinners of Milk and Ice Cream Cans and Retinning of All Kinds PLEASE CONSIDER

Twelve years experience in rebuilding and retinning Milk and Ice Cream Cans

Most up-to-date and best organized re-

We make our own parts, such as Bottoms, Rings, Rims, Handles, etc., hence our ability to quote lower prices.

Write for price list.

ALOIS AUFRICHTIG COPPER & SHEET IRON MFG. CO.

900 South Third Street St. Louis, Mo.

TUB COVERS



TARPAULINS, etc.

Samples and prices on application

Clifton Manufacturing Co.

Everything in

Waco Texas

GLACIFER

Patent Claims Allowed

DRY PACKER



20 Quart Model Weight, with Ice Cream and Can, 105 Lbs.

Price \$15.00

COPY

DEPARTMENT OF HEALTH
City of Biddeford

October 7, 1920.

D. C. KELEHER, Mansion House Ice Cream Co., East Cambridge, Mass.

Dear Sir.

I do not know what time you pack the Iccless Packer, but the Packer came by Atlantic Express and comes over the road by auto truck and it is supposed to arrive here by eight a.m., but it was eleven o'clock before we received that Iccless Packer both times it was shipped, and the cream was firm and hard, in fact it was the only time that the cream was fit to be served, as we have to pack all cream that comes in ordinary packers as the cream is liquid.

My opinion of the Iceless Packer is that it lays over the old way a thousand fold, and any up-to-date house should use them.

> Very truly yours, (Signed) J. W. MAHONEY,

For information apply to

THE GLACIFER CO.

102 Merrimac St. Boston, Mass.

"Get This" says DOC

If you sic Germ-X on the microbes around your plant, it's "good-bye, Mike!" comes in one door, bacteria-microbes hot-foot it out another. When Germ-X

The ice cream maker who depends on scalding water, washing powder and muscle grease to sterilize his cans, mixers, homogenizers, and various receptacles, is leaning on a broken rod indeed. Bacteria are such tough minute creatures that over half of them escape. Hence off-flavored and poor keeping product results.

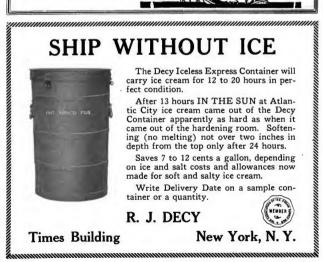
But Germ-X gets 'em all. A little Germ-X in a lot of water makes a rinsing solution that no bacteria can withstand. It is powerful, non-poisonous, practically odorless and in-expensive. Don't forget either that expensive. Don't lorget entire that Germ-X heals cuts, burns and bruises quickly. Send \$3.00 for a trial gallon of Germ-X. Doc guarantees you'll be more than satisfied.



GENERAL DISTRIBUTORS

The Creamery Package Mfg. Company

61-67 W. Kinzie Street, Chicago





Sturges Burn Brine-proof Can Enamel makes old cans look like new, and adds more years to their use.

Six colors-white. red. gray, yellow, green and blue.

Write for circular

STURGES & BURN MFG. CO.

Makers of Sturges Guaranteed Čapacity Milk Cans Congress & Green Sts. Chicago, U. S. A.

The Milk Man The Ice Cream Man The Bottler

SHOULD write at once for full information and a color card of



Derycote is brilliant, glossy, colored enamel that beautifies your package and preserves it in heat or cold—from salt, brine, acids or alkalies—and it will not fade.

Derycote is used by a large percentage of the nation's manufacturers in food products to give individuality to their con-

Derycote dries quickly on Wood or Metal.

Manufactured by



The National Paint & Varnish Co. Cleveland, Ohio U. S. A.

What About Paint?

—for your Tubs and Cabinets

NOMPETITION will be keen next Summer. Appearances will count. Brine-eaten hoops and staves may cripple the plant when business is best.

Arlington Tub Enamels are Brine-proof and made to withstand hard knocks, abuse and exposure.

Arlington Brineproof Asphaltum gives absolute protection to the inside of tubs (also metal-lined cabinets) for an entire season in spite of heavy pounding.

Both products are money-savers for the less Gream Frade. We will match your special color.

MAIL THIS COUPON

MFG. CO. Canton, Ohio

Please send us color cards prices, testing samples, and special proposition on your Tub namels and Asphaltum Paint. se about......tubs. use about.

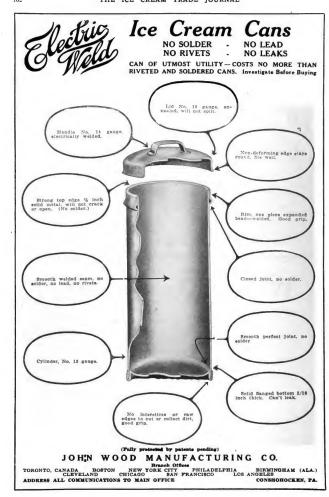
The Arlington Mfg. Co.

Technical and Industrial Paints CANTON, OHIO

Address

City

State



The Turnbull Ice Cream Sugar Cone Machine AUTOMATICALLY BAKES 1080 SUGAR CONES PER HOUR

The Only Ice Cream Sugar Cone Baking Machine on the Market EVERY ICE CREAM MANUFACTURER SHOULD HAVE ONE

The Ever Increasing Demand for SUGAR CONES



Necessitates
This Labor
Saving
Device



T HE BAKING device consist of a heavy circular table made of iron and equipped with twelve baking irons. Above this table there is a large tank in which the batter is placed and from which it is fed to the baking can be regulated to defiver any quantity of batter desired to each baking iron. The baking irons are entirely automatic in their operations and they are heated from above and from below by burners using either natural or artificial gas.

When the power is applied, instantly the circular table top begins to move, each baking

iron automatically opens when it comes to a position immediately beneath the outlet pipe from the batter tank, enough batter to make cong of the desired size is forced into this baking iron, which instantly closes and passes between the burners, where it is baked uniformly on both sides at the same time. Simultaneously another baking iron passes benthe the batter pipe and this in turn follows the first.

The consumption of fuel is very slight and there is absolutely no waste, either of fuel to heat the baking irons or of batter used in making the cones.

Send for Prices and Descriptive Catalogue

The Turnbull Manufacturing Co.

N. E. Vail & Co., Inc., Proprietors
THE LARGEST SUGAR CONE PRODUCERS IN THE UNITED STATES
MOUNT VERNON. N. Y.

District by Google

AUTOMATIC CONE MACHINES

That bake Real Sugar Cones at the lowest possible cost. Control the quality and supply of your cones by using our improved machine.

Let us tell you how.

THE CREAM CONE MACHINE CO. 5806 Hough Ave., Cleveland

Selden Trucks

11/2, 21/2, 31/2, 5 Ton Models All Worm Drive

Write for Complete Information

Selden Truck Corporation Rochester, N. Y., U. S. A.



DO NOT wait until you are rushed before you inquire about

"Cyclone" Ice Cream Brick Cutters

Send for circular at once.

I REBUILD & REGALVANIZE BRICK TANKS equal to NEW at less than ONE-HALF the cost of new tanks.



1035 Third Avenue New York City



Meyer Ice Cream Delivery Equipment

Standardized Units **Ouick Deliveries**



Order NOW for Spring Delivery.

Mever Wagon Works 216 Elm Street Buffalo, N. Y.



A PRODUCT OF 20 YEARS' STANDING

Anti-drip Economical, Long Life, Adaptable Meyer Anti-drip Wagons Meyer Anti-drip Auto Bodies Meyer New Type Refrigerator Bodies





The City Dairies Company, St. Louis, says: "We are using our transportation truck to haul Ice Cream and Milk from our Manufacturing Plant to our West Branch, a distance of four miles. In addition to the great saving of ice and salt, which amounts to an average of about 90 per cent, we save considerable on labor, and our products arrive at destination in the very best of condition."

Your Cooling Room At Your Customer's Door



By utilizing the natural swaying of the truck while in motion, cold brine is circulated through refrigeration pipes hung from the ceiling of the ice cream compartment, thus converting it into a refrigerator, virtually as efficient as the cooling rooms in your plant.

The packing of ice cream in ice and salt for delivery is done away with, saving time, disagreeable labor and at least 1000 lbs, of ice and 200 lbs, of salt daily.

Adequate and convenient space is provided for capacity loads of fresh ice and salt for packing at the retailers, while empty cans are carried in a closed compartment opening from the rear.

Anheuser = Busch

ST. LOUIS, U. S. A.

AUTHORIZED BUILDERS FOR THE UNITED STATES OF

A-B-C Type Refrigerator Bodies

Chicago Sales Office: 80 East Jackson Boulevard



GET READY FOR A BIG YEAR

Plan now for a delivery system satisfactory to your customers and to yourself — a system that is

Economical
Efficient
Electric and
Edison-Equipped

Electric trucks are proving their value every day. Electricity is cheap power. Ordinary drivers quickly learn to operate electrics. Edison Batteries furnish reliable power year after year.

The outstanding feature of Edison-equipped trucks is high "service efficiency"—the greatest number of days of service each year over a period of years, at minimum cost of operation.

Investigate electric trucks. They mean economy and satisfaction.

Bulletin 850BD on request.

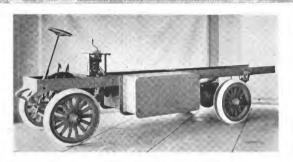
Edison Storage Battery Co. Orange, N. J.

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Simplicity Durability Economy

Simplicity, durability and economy are the three outstanding features of WARD ELECTRIC TRUCKS.

WARD ELECTRICS are simple in construction. They have but one motor and one pair of driving gears in the propelling mechanism. Contrast this simplicity with other constructions using from eight to thirty-two gears in the driving train.

WARD ELECTRICS are durable in operation, partly because of the simplicity of construction and very largely because of the oversize parts used in the various component parts of the truck. For instance, we use the Sheldon locomotive type of axle and have adopted their 5 ton axle for our 3½ ton job and have placed their 7 ton axle under our 5 ton job.

WARD ELECTRICS are economical, not only in first cost, but in operation cost as well. They are economical in first cost, because we give you more for your money than any other electric truck builder. They are economical in operation because of the simplicity of the driving mechanism, the durability of the truck in service and the high efficiency and consequent low current cost necessary for the propulsion of the truck.

Before you make your next truck purchases should you not in justice to yourself investigate WARD ELECTRICS? It will cost you nothing to do this and it may be worth many thousands of dollars to get a satisfactory solution to your transportation problem now.



Ward Motor Vehicle Company Mt. Vernon. N. Y.

Builders of Electric Trucks 750 to 10,000 lbs. capacity

Exide users say

- "Our Ironclad Battery lasted approximately four years."
- "We have had no interruptions of service on account of battery trouble to any extent during the five years in which we have used your batteries"
- "We have used each battery from three to four years. We have averaged about thirty miles per day."
- "If I had bought an electric truck three years ago, it would have saved enough money by now to have paid for itself"

Why the Exide-Ironclad Battery?

It has power with a punch behind it.

It has endurance.

It has high efficiency.

It has long life.

It is the result of thirty-three years of battery-building experience.

It is absolutely different in construction and performance from any other battery.

It is made and backed by the oldest and largest manufacturers of storage batteries in the world.

Install an Exide-Ironclad Battery in your electric truck and see for yourself.





Ward Electric Truck equipped with an Exide-IroncladBattery

The Electric Truck Is Economical

"Our 5-ton electric trucks are capable of an average daily mileage of at least 50 miles, and are at least 25% cheaper to operate. That's why we bought our electrics and have given a repeat order." So writes an executive of one of the best-known firms in the country, which uses Exide-Ironclad Batteries exclusively.

That is the big idea in electric vehicles. For the usual run of city hauling,

with many stops and daily mileages of fifty miles or less, they help to do more work with the old force, and they do it at less cost than any other means.

The electric truck gives maximum results when it gets its power from an Exide-Ironclad Battery—the one battery that combines all the essentials for day-in-day-out service in electric vehicles — maximum power ability, ruggedness, long life, and high efficiency. Investigate the possibilities of the Exide-Ironclad equipped "Electric" for your business. Write for our free booklet, "15 POINTS OF EXIDE-IRONCLAD"

THE ELECTRIC STORAGE BATTERY CO.

· Oldest and largest manufacturers in the world of Storage

Batteries for every purpose 1888 PHILADELPHIA

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Branches in seventeen cities

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WHEN it comes to fleets, look over this list of Walker fleet users. What do these continued endorsements of Walker Electric truck economy mean to you?

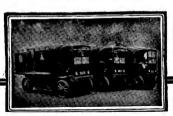
American Railway Express
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Anderson & Goodman
Blue Valley Creamery Co.
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Cudahy Packing Company
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Our latest catalogue is just off the press. Write for a copy today.

WALKER Electric TRUCKS LOWEST TRUCKING COST

WALKER VEHICLE COMPANY CHICAGO NEW YORK BOSTON PHILADEPHIA BUFFALO



AMERICA'S LARGEST MANUFAC-TURERS OF ELECTRIC TRUCKS & TRACTORS



DUMORE

"It Does the Work"



LAST LIFE A TIME

Whole and skim milk are used to reduce a heavy cream to a lower percentage, but when bottled, there is a precipitate which is objectionable and undesirable. Pasteurization, it is well known, also affects the viscosity of cream. It was thought that a high pressure pump would solve these problems and to this end, experiments were made. After a few changes, it was found that any process of end, experiments were made. After a few changes, it was found that any process of mixing and smoothing out or recombining milk and its products could be accomplished; hence its name DUMORE. It has been doing satisfactory work for nearly lour years, and two Ice Cream plants have been using it with excellent results making the mix prefered smooth and adding the process of the proc Indianapolis, Indiana.

SAFETY FIRST

Can not strain or damage the DUMORE with excess pressured can run empty without damage or danger to pump or person; no mechanical troubles, no operator required. SIMPLE AND SAFE.

2000 to 4000 pounds \$1,000.00 4000 to 6000 pounds \$1,250.00

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DUMORE Steam Power POSITIVE Belt Slippage Small Hole vs. Discharge FULL SIZE OPENING VS. Shattering Squeezing V5. Compression vs. Combustion Expanding Explosion

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VITAL PHASE IN

Viscolizer GOODNESS

ANY Pump Manufacturer who cares to do so can duplicate, after a period of years, the physical accomplishments of the VISCO-LIZER.

ANY Pump Manufacturer can, if he chooses, dedicate himself to the same scrupulously fine results.

ANY Pump Manufacturer can duplicate the VISCOLIZER design if he pleases, and strive to conform to the principles upon which that design is based.

STANDARDIZATION and perfect alignment of parts and the development of a high order of craftsmanship in the very slightest detail all of these are ideals to which any organization may aspire.

BUT the stubborn and significant fact remains that after forty-five years, there is still but one Union Pump and one Union organization.

IT is not merely the possession of all these physical and other advantages which have made the VISCOLIZER what it is.

IT is the working together of all of the essential elements over a long, long, pains-taking period, that has taken all the troubles out of the VISCOLIZER, and put into it those features which produce all the qualities sought for and which render it unique among the same purpose machines, the world over.

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HAVE YOU AN AUTOMATIC HOT WATER PUMP?
HAVE YOU A BOILER FEED PUMP?



HERE IS A COMBINED AUTOMATIC HOT WATER RETURN AND BOILER FEED PUMP

THE ANSWER TO BOTH QUESTIONS

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FOUNDRY AND FACTORY

ASK FOR BULLETIN No. 57
PUMPS FOR ANY PLACE IN AN ICE CREAM PLANT

UNION STEAM PUMP COMPANY
BATTLE CREEK, MICHIGAN

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Speaking of Tanks

—you will find it hard to improve upon those we are offering the ice cream industry today. Pfaudler Storage and Aging Tanks have brought about that uniformity in the manufacture of ice cream which makes "every dish the same" and which builds a certain confidence in the public.

If you are desirous of obtaining a thorough and yet economic distribution of total solids throughout the mix, with a minimum expenditure of time, money and effort we can furnish you with the necessary equipment. If you feel that you are sometimes



Ice Cream Storage and Aging Tanks from the National Ice Cream Co., Oakland, Calif.

running over the standard in butterfat requirements, we recommend that you install Pfaudler Storage and Aging Tanks of the necessary capacities. You will be surprised to find how extremely profitable the ice cream business may become if you are properly and thoroughly equipped.

The PFAUDLERCO.

The World's Largest Makers of Glass Lined Steel Equipment ROCHESTER, NEW YORK

NEW YORK CHICAGO ST. LOUIS SAN FRANCISCO
FOREIGN AGENCIES:
Enamelled Metal Products Corporation, Ltd., Imperial Bidgs,
96 Kingsway, London, England
Mauri Bros. & Thompson, 129-111 Castlereagh St., Sydney, Australia

Transporting Milk Road & Rail



Glass Lined Car Tanks used for hauling mill from Pioneer, Ohio, to Morenci, Mich.

The National Dairy Co., Toledo, Ohio, bought two Elyria Glass Lined Car Tanks. The investment proved profitable, so profitable that they have decided to purchase two more.

From eight o'clock a.m. until four p.m. the tanks are in process of loading at the company creamery. Pioneer, Ohio. They remain on the siding over night and then travel twenty miles to the main plant at Morenci, Michigan, where the milk is drawn as desired. Thus they serve the double purpose of storage and transportation.

This is the National Dairy Company report:

\$40.00 per day was saved on freight. Did away with the use of 900 milk cans. Average rise in temperature, taken over twenty day period, milk remaining in tanks eighteen hours, was 6.5° F.

Glass Enameled Elyria Tanks

are cutting transportation costs for two of the largest dairy companies in the United States.

The Rieck-McJunkin Dairy Company, Pittsburgh, Pennsylvania, use two [400]-gallon Elyria Glass Lined Truck Tanks for hauling raw milk from a creamery at Windsor, Ohio, to a Rieck-McJunkin Condensory at Lockwood, Ohio.

The tanks make three round trips per day, traveling sixty miles over the roughest roads in the state of Ohio. After two years of such service they are almost as good as new.

A condensed report of results as set forth by the Ricck-McJunkin plant superintentendent follows:

Time required for loading, 9 minutes.

Time required for unloading, 12 minutes. Time required for cleaning, 10 minutes.

Money saved in eighteen months by the elimination of labor, \$2960.

Made unnecessary the use of 400 milk cans.

Average time of trip was 1 hour and 20 minutes.

Average rise in temperature was five degress Fahrenheit.

The Elyria Enameled Products Company

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MANNING BATCH MIXERS

Manning Batch Mixer appeals to the Ice Cream manufacturer who is looking for a uniformly smooth, pleasing product—plus the last word in time and labor saving. By applying correct mechanical and scientific principles to mixing, storage and aging, the Manning Batch Mixer allows more time for other equally-important processes of manufacture

The Manning coil—with double inlet and outlet—cuts in half the time required for heating and cooling. Saves fuel, ice and salt.

Manning precision and correctness are carried out in the smallest detail. Every part must deliver durability and efficiency worthy of the Manning name.

Capacities 50 to 1200 gallons. Low cost and low upkeep make the Manning Batch Mixer a sure winner in any serious comparison. Send for calalog and name of nearest Manning dealer.

The MANNING CAN WASHER

Clean cans—absolutely clean—are no longer a question of debate. The Manning Washer teaches every corner, operates swiftly, and treats the cans gently. First cost surprisingly low.



The MANNING CAN DRYER

Every well-ordered plant needs this Dryer. It cuts down the bacteria content and prevents loss through rusting cans.

Be sure to ask for out Can Dryer



The Manning Catalogs will tell you in detail the reason why you should use Manning Equipment.

Don't Save On Ice Breakers to Waste on Trucks

HALF a dozen trucks or teams standing idle at \$5.00 per hour, waiting their turn at the ice breaker, will soon make the charges on an extra ice breaker look like next to nothing.

Many ice cream plants have outgrown the ice breaker which they bought years ago or the ice breaker is worn out or is of an inefficient type which does not break the ice to just the size required for packing ice cream in modern tubs. Again many ice cream establishments are spending altogether too much money for labor to handle ice cakes and broken ice.



Frequently by proper laying out of the ice-breaking equipment, using the Creasey Hopper-Type Breaker, which can be placed close to or beneath the floor, or using a Creasey Direct-motor-drive Breaker, it is possible to rearrange the plant and save the labor of a number of men or to reduce greatly the time required for icing.

It is these savings that go to make up profits, since the selling price is usually fixed by competition.

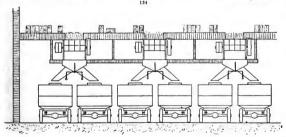
Our Engineering Department would be glad to submit suggestions for the best possible arrangement of your icing plant upon receipt of a sketch with statement of your present conditions, quantity of broken ice required per hour, etc.

Ask for Engineering Bulletin C-1

Joseph S. Lovering Wharton, Mfr.

3123 N. 17th Street

Philadelphia, Pa.





Absolutely Clean, Dry, Sterilized Ice Cream Cans an actual accomplishment with the

The Mark of Merit Can Sterilizer and Drier No. 6A

CAPACITY-300 CANS PER HOUR. KILLS BACTERIA.

INCREASES THE KEEPING OUALITY OF THE PRODUCT.

INPROVES THE FLAVOR.

LENGTHENS LIFE OF CANS.

PREVENTS RUST.

You should investigate the merits of this machine—NOW.

Shall we send you further information?



Jensen Creamery Machinery Company

BLOOMFIELD, N. J. Builders of "Equipment of Practical Efficiency" OAKLAND, CALIF.

CHAMPION ICE BREAKERS

Champion No. 11 shown here has a capacity of 40 to 60 tons of broken (not crushed) ice per hour and can be set on the floor or hung from the ceiling and is designed for the cream factory.

Motor driven, either belt or chain drive. The motor is protected by an extra heavy reinforced iron hood. The teeth are diamond pointed and



use drives teeth more firmly into sockets. They are easily removed for sharpening. All gears enclosed in heavy castion guard. It is back geared with ring oiler bearings, all main bearings being interchangeable. All nuts and bolts of Tobin bronze and rust proof.

Other sizes to meet the needs of any plant.

Write for descriptive catalogue and prices now.



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Office: 461 Canal St., New York, N.Y.
Factory: Arlington, N. J.



The Ruff Condensing Evaporator versus Business Worry

The Ruff Condensing Evaporator is the positive means of side-tracking any worry about what effect financial and unsettled labor conditions will have on your business the coming season.

Because, you will be able to reduce the cost of manufacturing your Ice Cream sufficient, so that your justly entitled net income will not be decreased in case sales should drop off in 1921 as might be expected.

Besides, the flavor is a lot better—the best reliable requirement to build up any business.

Don't Wait But Order Now

With a Ruff Evaporator running when the season is on your manager is well safeguarded against business worry.

THE CREAM PRODUCTION COMPANY

B. TRUDEL & COMPANY

Manufacturers for United States

Manufacturers for United States

Port Huron, Michigan

Montreal, Quebec

Better Mix at Lower Cost



36 Inch Vacuum Condensing Unit; capacity 185 gal. of finished mix per hour. Floor space 8x10 ft., 11 ft. high.

A Better flavored Product, Overrun more easily obtained, Substantially reduced costs, More profits,

These are some of the results you will obtain by the installation of a

Mojonnier Vacuum Condensing Unit

in your ice cream plant. The 36" unit illustrated will handle approximately 1850 gallons of finished mix per 10 hour day which should produce 3700 gallons of finished ice cream.

Mojonnier service goes with each condensing unit. This includes the best method of installing, operating and instruction in the manufacture of milk, ice cream mix and all forms of condensed milk

Write for circular and further information.

<u>Mojonnier Bros. Co.</u>

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Milk Condensing Machinery



Small Capacitly High Type

Vacuum Pan and Patented

Condenser

IN ALL CAPACITIES

Our machinery will make all the different kinds of condensed milk that is manufactured. Also condenses buttermilk, milk for drying, also for chocolate manufacturers, etc. Write us.

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ESTABLISHED 1884

Copper Condensing Pans FOR ALL CLASSES OF MILK



Large amount of heating surface which is very low in the pan. Large steam inlets and outlets for utilizing exhaust steam

Get our Blueprints with Specifications and Prices.

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The Ice Cream, Soda Fountain and Confectionery Trade appreciate the value of a good cold storage and plenty of Ice during the summer. The set of tools suggested here are suitable for harvesting 100 to 500 tons of Ice.-Everyone gathering Ice can afford his own outfit. Place your order early.

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TOOLS ICE

SUITABLE FOR HARVEST-ING 500 TONS OF ICE,

- No. 315 8-in. Ice King Plow. 1 No. 412 Plow Rope. 1 No. 422 5-ft, Ice Saw
- 2 No. 444 Splitting Forks. 1 No. 457 Calking Bar. 1 No. 458 Bar Chisel.

- 1 No. 458 Bar Chiesl.
 1 No. 470 Fiorr Shaver.
 1 No. 476 Ring Splitting Chiesl.
 1 No. 500 Line Marker.
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Plans, specifications and supervision of buildings and equipment for ice cream and dairy plants. Tests and examinations of existing plants.

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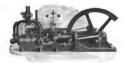
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Horizontal Double-Acting Refrigerating

Ice making and Refrigerating Machinery of the HORIZONTAL DOUBLE-ACTING type, built in all sizes from 6 tons to 750 tons daily capacity.

Small SINGLE-ACTING VERTICAL COMPRESSORS, in all sizes from 1 ton to 12½ tons daily capacity, for belt drive or direct connected to steam engine.

THE VILTER MANUFACTURING CO., 888 Clinton Street, Milwaukee, Wis.



Teamwork in the Hardening Room

HARDENING room efficiency requires the co-operation of two factors: The refrigeration which takes the heat out and the insulation which keeps it out. The more heat you can exclude, the less the machine has to handle. In other words, the better the insulation, the lower the operating cost.

Backing up the refrigerating plant with Nonpareil Corkboard Insulation is the surest road to operating economy. Nonpareil Corkboard not only ranks highest in heat retarding capacity, but its ability to resist moisture absorption permanently is assurance against any deterioration in insulating value. After all, that is the real test of insulation—not initial efficiency alone, but the ability to retain that efficiency through many years of service. Time alone is the proof and Nonpareil Corkboard has stood that test.

If you are building, extending or remodeling, or planning for il, send for "Nonpareil Corkboard Insulation" for facts and figures that you can't get anywhere else. This 152-page book should be in every plant using refrigeration. It will be mailed promptly on request, free of charge or obligation.

Armstrong Cork & Insulation Co., 109 Twenty-fourth St., Pittsburgh, Pa.

Also manufacturers of Nonpareil Cork Cevering for brine and ammonia lines, coolers, tanks and cold surfaces generally. Nonpareil High Persinne Coctoring for strom lines, feed water heaters, boilers, etc.; Nonpareil Invalating Brief for buler settings, furnaccs, evens, etc.; Nonpareil Cork Matchinery Italation for neury machines, and Limite and Amstering's Cork Tile for Hoors in objects, residence, as

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=For Ice Cream Hardening Rooms=



VEN at the higher construction cost levels, many ice cream plants have been able to increase their production dollar from 15 to 30 per cent. by means of a skilfully arranged and executed plan which developed the efficiency of the labor hour, reduced the equipment investment as well as eliminated the wastes and blunders in the purchase of building materials and contractors' time. That is the function of McCOR-MICK SERVICE

Our organization has nothing to sell but expert engineering ability, experience gained from many years' study of building and operating problems, and a counsellor and supervision service absolutely free from biasing influences. You get the advantage of competitive bids on every item of material and equipment entering into your plant.

McCORMICK SERVICE is based on sound engineering practice, made practical and economical through the application of specialized experience in the ice cream and dairy industry and a technical knowledge of its mechanical problems.

When you are ready to consider your new plant or remodeling plans, we will be glad to explain what McCORMICK SERVICE can do for you and how it more than saves its cost during the first year's operation. No obligation for consultation,

THE McCormick Company. Inc.

PITTSBURGH Century Building NEW YORK 41 Park Row

Specialists in Ice Cream and Dairy Plant Architecture and Engineering

Year In and Year Out



Our catalog is a text book on refrigeration and will be mailed free on application.

Phoenix Compressors are producing tons and tons of refrigeration at a remarkably low cost.

Because our years of experience and the selection of only the best materials coupled with the employment of only skilled workmen make the Phoenix the "Ultimate Compressor."

For dependable, economical refrigeration you should investigate Phoenix Equipment.

THE PHOENIX ICE MACHINE COMPANY



2708 Church Ave. Cleveland, Ohio



Make Preparation Now

for next season's Ice Cream trade. Do you want to operate Economically? You certainly do. Then, use the exhaust steam, to produce refrigeration, which now goes to waste in your plant. The use of exhaust steam, the elimination of rapid running parts, highly efficient economical service are the three principle selling points of

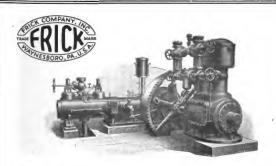
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Refrigerating Equipment for Ice Cream Production

Let us send you a Bullatin

HENRY VOGT MACHINE COMPANY, Louisville, Kentucky

Manufacturers of Ice and Refrigerating Machinery, Drop Forged Steel Valves and Fittings, Water Tube and Horizontal Return Tubular Boilers, Oil Refinery Equipment.



Frick Vertical Enclosed Machine with Uniflow Engine

One of the Frick Family

The above type of Refrigerating Machine is furnished in units of from 25 to 60 tons refrigerating capacity. It is the most economical and efficient type of steam driven machine.

The direct connected steam engine is the uniflow design with balanced double seated poppet valves and fly wheel inertia type governor.

Over thirty-eight years of progressive manufacturing experience in the refrigerating field is built into every Frick machine. This insures their dependability.

Frick machines are heavy. The metal used is of the best quality and is properly distributed to give proper proportion and strength. They are designed for maximum service and minimum economy.

Our Customers Are Our References



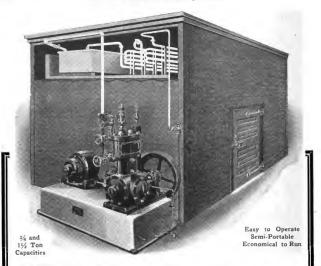
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CP Refrigerating Systems In Small Sizes—At Low Price

UST the outfit for small storage rooms or refrigerators, for soda fountains, for cooling water for carbonating purposes, for cooling compartments on caudy machines, etc., etc. Avoids the muss and bother of ice cooling systems. Much less expensive, too, for

the CP System will provide refrigeration at temperature desired for less than 8c per hundredweight as compared to ice refrigeration. The temperature is dry and uniform-two important features to prevent spoilage of products.

The 34 and 11/2-ton CP Outfits are self-contained. In other words, the high side or eperating mechanism are in one compact unit. The compressor and motor are mounted on a cast iron base inside of which the receiver and condenser are located. No concrete foundations are necessary. Outfit can be moved from one location to another. Can be supplied for operation by hand or for electric thermostat automatic operation,

We build mechanical refrigerating systems in all sizes, either vertical or horizontal as desired. Hundreds of Cl' Systems have been installed in ice cream plants to date. Consuit us without obligation if you have a refrigeration problem.

The Creamery Package Mfg.Company

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MACHINERY, MILK
AND CREAM
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CHINERY, CHEESE
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MACHINERY

SALES BRANCHES-(Write to Nearest One) Chicago, 61-67 W. Kinzle St. Buffalo, 132-137 E. Swan St. Kansas City, 1408-10 W. 12th St. Minneapolis, 318-29 3rd St. N. Omaha, 113-15-17 So. 10th St.

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ICE CREAM MAK-SYSTEMS, DAIRY MACHINERY AND SUPPLIES



SANITARY, ECONOMICAL and RELIABLE
ADJUNCT TO THE

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Lowers cost of production-Increases output



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YORK MANUFACTURING CO.

Ice Making and Refrigerating Machinery Exclusively

YORK, PA



Hagan Ice Cream Company's Plant at Connellsville, Pa.



Designed and Installed

K. W. SCHANTZ, Inc.

Engineers and Contractors

78 Main St., Buffalo, N. Y.

Y. SHEMBER &

FORMERLY WEGNER MACHINE CO.

DIVIDENDS



Will largely depend upon your wise choice of a

REFRIGERATING PLANT.

Eliminate troubles by purchasing

The Simplified Arctic

A Plant That Has Always Made Good

Both Horizontal and Vertical Types In sizes from 1 to 1000 tons capacity We specialize in Ice Cream and Dairy

Plants

Send for information blank, if you desire quotations

THE ARCTIC ICE MACHINE CO., Canton, Ohio



CONTINENTAL

Direct Expansion Ice Cream Freezer

SAVES POWER

Your power bill is probably a big item.

It will be greatly reduced if you use Continental Freezers.

We use no brine.

We use no brine pumps.

All of which require power.

We use a little over one-half the refrigeration of other freezers, hence another saving in power.

In the next issue we shall tell you about saving in time.

He also manufacture a full line of refrigerating machinery.

CONTINENTAL MACHINERY COMPANY

General Office

111 W. Monroe St., Chicago, Ill.

Factory
Fort Madison, Iowa

The Miller Pasteurizing Machine Company, in order fully to protect the rights acquired by it in the property and business, including the good will of the business, of The Tyson Company, recently joined, as plaintiff, in a suit in the Court of Common Pleas in Stark County, Ohio, against The Tyson Company, The Advance Dairy Machinery Company, and Frank Tyson, among others, as defendants. Upon the issues joined the Court has found in favor of the plaintiff and against The Tyson Company, The Advance Dairy Machinery Company, and Frank Tyson among other defendants.

As a result of the decree in our favor, the defendants, The Tyson Company, The Advance Dairy Machinery Company and Frank Tyson are now enjoined, among other things, from manufacturing or causing to be manufactured, any ice cream freezers covered by Letters Patent of the United States owned by The Tyson Company at the time of the sale; from filling or supplying any order for repairs and parts for such Tyson ice cream freezers; and from doing any act or thing which will directly or indirectly interfere to any extent with our exclusive enjoyment of the right, license and privilege to make, use and sell all devices covered by the claims of such Letters Patent.

They are also now enjoined from doing any act or thing which will directly or indirectly interfere to any extent with our exclusive enjoyment of the business or good will of the business owned by The Tyson Company or Frank Tyson, jointly or severally, at the time of the making of the agreements of sale; and from affirmatively doing any thing to cause the public or trade to believe that The Advance Dairy Machinery Company is the successor in business to The Tyson Company.

The Miller Pasteurizing Machine Company alone is licensed to make Tyson freezers. It is now in possession of the manufacturing equipment, stock of material, etc., necessary to enable it to continue the Tyson line. We are manufacturing, intend to continue manufacturing and are prepared promptly to furnish Tyson freezers and parts and supplies therefor, maintaining the established standard and quality of product.

We also are alone authorized to fill orders for parts, repairs and supplies for Tyson freezers and are prepared to do so promptly and at reasonable prices.

The Miller Pasteurizing Machine Company Canton, Ohio

The Miller Pasteurizing Machine Co. GANTON O H 10

Send for Catalogue and Prices



THE MILLER HORIZONTAL
Pyramid Type



TYSON MODEL "C"
With Fruit Hopper
Patents Nos. 42,791, 43,277, 999,473 and
1,001,906. Other Patents Pending



PATENTED
THE MILLER-HOEFLER
Double Beater



PATENTED
MILLER ANVIL BASE PATTERN
40 Quart-Motor Drive



The Creamony Pechage Mrg. Company, Eastern City, No. August and, 1920.

OHLIN TOWN

Tou are at liberty to refer to us at in operation here in our plant, your Thanking you for past favors, so are Yours very truly, Cirotal Ioo Cross corcans

MR. Owsley's with Fort Atkinson Horizontal Freezers is but typical of that of hundreds of other users of this popular machine. We value his letter particularly because he demands the best equipment possible and appreciates it when he gets it.

FORT ATKINSON Horizontal Freezers owe their immense popularity to the fact that they excel in quality of product turned out, to their ease and simplicity of operation, to their economical up-keep and to their long life under severe working conditions. Built in 40 and 100 quart sizes. Please write for free booklet "Modern Ice Cream Freezing."

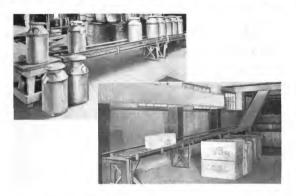


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Does Gravity Work In Your Plant?

Or do you use valuable labor and power to do your lugging when you can put this free power to work?

The Mathews Gravity Conveyer has set Gravity to hauling the products of a host of manufacturers — keeping the path of production clear and unobstructed.

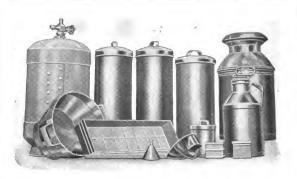
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We adopted the policy of not accepting an order unless we were confident we were able to fill it.

Every K-W Customer received all of the cans ordered from us in time for their needs.

THIS SEASON

We are following out the same sales policy.

If you place your orders with us you will be assured of your cans when you need them.

All K-W Cans are made of KEYSTONE COPPER BEARING STEEL, properly tinned and true to capacity.



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THE ICE CREAM TRADE JOURNAL

Vol. XVII

No. 2

A PRACTICAL
HELPER
FOR
IGE CREAM
MANUFACTURERS
AND A
CHRONICLE
OF TRADE EVENTS



Official Organ of The National Association of Ice Cream Manufacturers.

The Association of Ice Cream Supply Men.
The Ass'n of Ice Cream M'I'rs of New York State.
The Association of Ice Cream M'I'rs of Pennsylvania.
The Ohio Association of Ice Cream M'I'rs of Pennsylvania.
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FEBRUARY, 1921

PUBLISHED
MONTHLY
BY
THOMAS D. CUTLER
171 MADISON AVE.
NEW YORK
TWO DOLLARS
A YEAR



FOR ICE CREAM

<u>low</u>ney's

COCOA POWDER CHOCOLATE LIQUORS

We shall be glad to quote prices and to send samples

Chocolate Coatings Cocoa Butter

The Walter M. Lowney Company, Boston, Mass.



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THE OLD RELIABLE

Arabian Coffee

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It has stood the test for many years

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Successors to ABELSEN & SCOTT

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FAMOUS

Ice Cream Flavor

Vanilla and Tonka Blend No. 52 Special

Finest Flavor Made

WE WISH TO CALL YOUR PARTICULAR ATTENTION TO OUR HUDSON'S ICE CREAM FLAVOR VANILLA AND TONKA BLEND NO. 52 SPECIAL (all Vanilla with a small per cent Tonka), a piece of goods which is especially adapted where Ice Cream is made for commercial purposes and shipping. The Flavor positively will not freeze out. Where Condensed Milk, Homogenized Cream or Pasteurized Milk is used it takes a very strong flavor to get satisfactory results and overcome the condensed or powdered milk taste, and Hudson's Ice Cream Flavor Vanilla and Tonka Blend No. 52 Special is especially adapted for this purpose. The small percentage of Tonka blended with the all Vanilla causes the extract to retain its fruity flavor when exposed to freezing.

TONKA BEANS, and just as pure and wholesome, and, best of all. Vanilla and Tonka will give the desired results at half the expense.

Put up in 10-gallon kegs, half barrels and barrels only.

10-GALLON KEGS	5.50	Per	Gallon
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Unequalled for the Ice Cream Manufacturer. One and one-half ounces give a mild, rich flavor, and two ounces a high flavor to what will make a 10-rallon batch of Ice Cream.

Let us send you a sample package, freight prepaid, to your city. You may return same at our expense if not entirely satisfactory.

Ice Cream makers who are looking for profit and reputation are using our Hudson's Ice Cream Flavor Vanilla & Tonka Blend No. 52 Special only.

The Hudson Manufacturing Company



(INCORPORATED)

Gabe S. Wegener, President

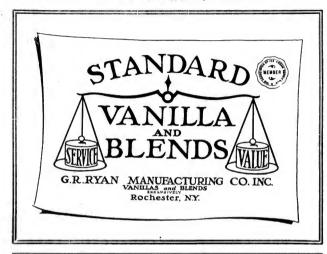
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Ninety-two per cent of trial orders mailed throughout the country has brought in substantial stock orders.

The rich color of the Egg combined with the delicate and precise flavor of MOTHER'S Custard pies is reproduced in making a delicious Custard Ice Cream of quality distinction.

Working sample for a 40 qt, stand—36c or 1½c to flavor and color one gallon of cream when purchased in 5-gal, lots.

Acme Bisque, Shelbark or Walnut Flavor .
Working Sample for a 40-quart Freeze, 60c

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Positively will unlock the door that leads to LEADERSHIP in the field. You can make the highest grade

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Do not confuse Mapleine with the usual maple flavoring composed of unstable ethers.

It is made solely from vegetable materials, blended into a perfect maple flavoring, highly concentrated.

Will not freeze out and holds true through storing.

Convince yourself that Mapleine will increase your maple sales.

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YOUR CUSTOMERS WILL AP-PRECIATE THE NATURAL, RICH FLAVOR OF PURE VANILLA WHICH FREEZES IN WHEN USED IN ALL FROZEN DAIN-TIES.

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Proprietors of "VANOLEUM". The Original concentrated vanilla flavor. We warn the trade against worthless imitations having similar sounding names claiming to be "the same as Vanoleum"

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Scott's Coffee Flavor

101 Vanilla

REALIZING that the only sure foundation for a permanent business is merit in the products offered and delivered, I am devoting my best efforts and matured experience to the production of flavoring specialties to be sold strictly on their merits—flavoring specialties which are exactly as represented and which must satisfy the buyer before the sale is complete.

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THE PERFECT
ICE CREAM FLAVOR

PRICES

For Immediate Shipment or 1921 Delivery

		PER GAL.
In Five Gallon Kegs		\$4.00
In Ten Gallon Kegs		3.85
In Fifteen Gallon Kegs		3.75
In Twenty Gallon Kegs		3.70
In Half Barrels .		3.65
In Barrels		3.50

OF COURSE you have been intending to try that Five Keg but you have been too busy.

Don't put it off any longer. Try it now before the Spring rush commences.

It will mean dollars and flavorsatisfaction for you this Summer.

Write Right Now!

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Expert Vanilla Chemists

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"Give Me Caramala Ice Cream"

Never add any other flavor or color to Caramala for Caramala Ice Oream.

PRICES:

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Caramala, an absolutely Pure Food Product, guaranteed under all Federal and State Food Laws. It is not an imitation of caramel or burnt sugar flavor. It is a new, distinct and better flavor.

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CARAMALA is now virtually universally known throughout the United States and Canada, and its users are enjoying an ever-increasing CARAMALA business, embracing also its manifold combination uses.

CARAMALA MERIT is recognized by ice cream manufacturers not alone in Caramale flavoring value, as evidenced by the instant and sustained CARAMALA response from the public, but also in the CARAMALA physical improvement in CARAMALA ICE CREAM, or any ice cream in which CARAMALA is present, even in a less amount than the full flavoring requirements, as in CARAMALA NUT ICE CREAM, CARAMALA ICE CREAM PUDDING, experiments, as in CARAMALA NUT ICE CREAM, CARAMALA ICE CREAM PUDDING, care and the control of the control of

CARAMALA, a fluid, requires neither waiting nor preparation.

CARAMALA ICE CREAM is always the smoothest and most firm ice cream in comparation with any other ice cream made from the same stock mix, and hardened under identical conditions.

Directions: -- Use one ounce CARAMALA to each gallon in your mix, or full four ounces for ten gallons of CARAMALA ICE CREAM.

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CARAMALA signs commensurate with order size supplied on request, as well as CARAMALA recipes.

Order direct or through any of the following well-known firme:

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Use the New Concentrate Eliminating All Waste

NEW MEXOCINE

Bean Vanilla, Vanillin, Coumarin and Tonka Flavors

IT IS ECONOMICAL

Use quarter ounce or dessert spoonful to flavor 10 gal. batch Ice Cream. Use quarter ounce or dessertspoonful to flavor 100 lb. batch candy. 87.00 per pint

5 pints \$6.75 per pint 10 pints \$6.50 per pint 25 pints 6.25 per pint 50 pints 6.00 per pint TERMS; 2% 10 DAYS 20 DAYS NET

Why pay for unnecessary alcohol when it is absolutely worthless from a flavoring standpoint? Why pay freight on water?

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257 Pacific Street

Brooklyn, New York City

PROTECT YOURSELF



Here are the reasons why you should Order your Cans, Tubs, Brick Tanks, Cabinets, etc., NOW

The manufacturers are filling orders on these goods, but are not making up any surplus to carry in stock.

The jobbers are basing their purchases on orders placed by their customers and will not carry large stocks this year.

Many of the large buyers have placed their orders, but many of them and most of the smaller manufacturers are holding off—looking for lower prices.

We do not expect lower prices on this sort of equipment during the Spring.

What we do expect and what has happened year after year is this:—So many of these buyers who are holding off will be driven into the market at one time when the season opens that the ready stocks of the jobbers and manufacturers will be cleaned out and many manufacturers who need equipment will be unable to get it.

There is no need of your being one of these people.

Our stock is complete now, but it will not be next July. Prices are right, too.



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Write us for prices.



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St. Louis



Manufacturers of Ice-Cream Makers' Supplies and Certified Food Colors.

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Quality is what you are looking for and Quality is what you get when you buy Red Seal Goods.

For flavoring your mix use:

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Satisfaction Guaranteed

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UNEQUALED ICE CREAM FLAVOR A VANILLA COMPOUND

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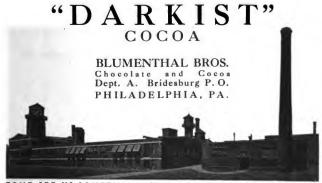
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The King of Ice Cream
Vanilla Flavors

Made Mexican Beans Fortified

14 Oz., 7c. Flavors, 5½ Gal. Mix of Ice Cream 3 Drams, 19c. Flavors, 190 Pounds of Candy

MANY SATISFIED USERS.

Price Per Pint

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Ice Cream Flavor

Two quarts of Tisco 545 Ice Cream Flavor produces a perfect flavor in 100 gallons of dairy mix, or 200 gallons ice cream.

Manufactured by

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Takes the place of rum in fruit puddings and sherbets.

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11/2 ounces flavor to ten gallons finished product

\$20.00 A GALLON

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Decorated for Excellence

KO-RACAS will pin a decoration on your chocolate ice cream which will lift it to a class above "just chocolate ice cream." Your customers will soon spread the word and build an increased trade which, ordinarily, would take you years to get.

The simplicity, the wholesomeness and the moderate cost of Ko-Racas make it doubly surprising that it should give such wonderful results. Try it yourself.

Ko-Racas makes them say: "Have another!"



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Prices No Higher Than Lower-Testing Gelatine

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"Price is a relative term-quality always a concrete fact."

THE reputation of Delft Gelatine, world-wide as it is, does not approximate the spoken enthusiasm of its users.

Read over carefully "Some of the Reasons Why you will want Delft Gelatines." Weigh them up against the gelatines you have been using, and if Delft appeals to you, let us send you samples and prices.



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We are new to you, but experienced in the manufacture of High Grade Ice Cream Gelatine, and are anxious to prove our worth.

Our Gelatine complies fully with all State and Federal Pure Food Laws.

Its use insures good texture and a smooth cream.

We guarantee Uniformity, Purity, Service, and Price.

To Prove This, IS:

Only possible by giving us an opportunity to demonstrate our product, by placing a trial order with us.

Or, if you will send a sample of your present supply, we will match same, and send you a duplicate article.

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Cassell Center Molds

For EASTER SUNDAY-Mar., 27th,



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In addition to the Egg we have The Star of Bethlehem

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Any of these \$1.35 each

This is an early Easter, so order NOW through your Jobber or

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THE PERFECT STABILIZER FOR ICE CREAM

TRIED, APPROVED AND USED BY THE ICE CREAM TRADE FOR THE PAST FIVE YEARS

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RIPPEY'S Powdered Foamoline

Specially Prepared

For Manufacturers

ICE CREAM. Sherbets.

Fruit Frosts AND

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that smooth, velvely appearance & faste so much admired by forces of ice Croam and percutuates he and serentiales lie rich, stramy flavor No Heat or Eggs required, you simply mix Rippey's

sugar while dry, add your cream or milk and it is ready for the Freezer,

FOR A LIMITED TIME WE WILL SEND BY MAIL, POST-FOR A LIMITED TIME WE WILL SEND BY MAIL, POST-AGE PAID, Full ½ pound on receipt of 25c. Also our Formulas for making lee Creams, Sherbets, Fruit Frosts, Water lees, Soda Water Syrup from Canned Fruits, Mailed Free on receipt of name and address. Caution: Rippey's Powdered Foamoline is packed in one pound boxes with registered trade- mark and signature of William Rippey on every box. Neversold in bulk.

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The Ideal Combination

ARABEE GUM

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The Ideal Sweetener

We could write a whole page about these wonderful products, but you write for a sample-or trial barrel-and we will let results do the talking.

Casada Products Company

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Established 1879

Gelatine is the most efficient of all stabilizers for Ice Cream

WHITTEN'S GELATINES Are Standard

Guaranteed to Comply with all National and State Pure Food Laws

STRENGTH, PURITY AND UNIFORMITY GUARANTEED

MANUFACTURED BY

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Dunn's Celebrated Ice Cream Gelatines

Guaranteed to comply with all State and National food law requirements.

TRIED, TESTED and PROVEN

When you want a stabilizer that never fails you, it's gelatine

THOMAS W. DUNN COMPANY
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CRYSTAL GELATINE

IN PACKAGE OR IN BULK

The most satisfactory stabilizer that can be used. Made in the largest and best equipped gelatine plant in America. Free from injurious chemicals or other impurities. A standard product most economical in the long run.

If you are particular—Specify CRYSTAL GELATINE.

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121 Beverly St., Boston, Mass.

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Incomparable Ice Cream and Frozen Specialties

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Milligan & Higgins Pure Food Gelatine

Bacteriologically and Chemically Pure

Warranted under all present Food Laws, both State and National. Experience has perfected Milliran & Higgins Gelatine, established the highest standard and proved their guarantee.

Milligan & Higgins Gelatine Company, 222-224 Front Street



Real Standardization

IT is only by long years of painstaking work that a manufacturer, devoting his whole time and thought to the making of one essential product, can eventually give to his finished article, day after day and year after year, a uniformity of quality and finish that can properly be termed Standardization.

ESSEX Gelatine is brought to such a standard of excellence in purity and in uniformity of grading, of strength, and of working properties, as to be rightly termed *Standardized*.

NOTHING used in the formula of an ice cream batch is more essential to the making of uniform body and texture than an assured uniformity in the gelatine stabilizer.

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Put UCOPCO Back of Your Product!

Look for the red drumyour purity protection

Velvety, smooth Ice Cream made with UCOPCO Pure Food Gelatine

OU can have confidence in the quality of your ice cream or candy only when you are sure of every ingredient. The very best gelatine is necessary for success. Take no chances-use UCOPCO Pure Food Gelatine.

ANUFACTURERS of ice cream and candy insist on UCOPCO-the finest binder, stabilizer, flavor and moisture retainer. Get all the facts about UCOPCO now-write today.

The United Chemical & Organic Products Co.

1831 Conway Bldg. Chicago, Ill.

217 Broadway New York, N.Y.



WCODO COMES FROM THIS GREAT FACTORY

ICE CREAM HOW TO MAKE

The Third Edition of my book is Just out, enlarged and improved, explaining in pain words and rarging and pasteurising the mix to get best resulting and pasteurising the mix to get best results, with cream or remade cream. The making dings, fancy less and forms, lee cream specials, its cream powder, liberty mix for quality and economy; bould know to meet competition is all its my book, of which there are over 3.00 in use. I will send the same on receipt of price, 8.06, by insured parts as men or receipt of price, 8.06, by insured parts

HERMAN GRATZ

Practical Ice Cream maker since 1872 2441 South 20th St. Philadelphia, Pa.



Fancy Molds

GET AND HOLD BUSINESS





Send \$2.00 for Sample Fruit or Flower Mold and let ue send you our complete price itst.







latest improved shipping package at the lowest possible price. Write for prices.

WE SELL TO JOBBERS ONLY

TURNBULL CONE & MACHINE CO. Mfrs. of Automatic CAKE Cone Machinery

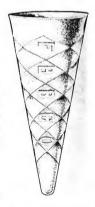
419 Fort St. Chattanooga, Tenn.

CONES

That Sell Ice Cream

We have added a New Cake Cone to our 1921 line. which is the acme of Flavor, Color, Crispness, and Shipping Quality. Years of experience as Bakers and Ice Cream Makers are reflected in the Big Repeaters, so called because they repeat wherever sold. Our facilities enable us to give the best of service. Secure our Catalog and prices.

Cone Department, Cincinnati, Ohio The French Bros. - Bauer Co.









he NEW MILAREN REAL CONE CAKE PULLY PROTECTED BY UNITED STATUS WITHEN

In this New McLaren "Real Cake" Cone we offer the trade a sugar-sweetened article that is in a class by itself.

It is scientifically designed to ship with a minimum amount of breakage, is distinctive in appearance, and at the same time possesses the superior eating qualities that have always characterized McLaren's Ice Cream Cones.

EXCLUSIVE FEATURES

1 - Smoothly Moulded Ring Around Top.

Strengthens top of cone. Prevents breakage when filling with ice

cream. Improves appearance.

2—The Name "McLAREN" Moulded in Rim of Cone.

Prevents imitation. Guarantees quality.

3-Breakage Protection Ring.

Prevents wedging action of cones in ship

Keeps them from splitting and sticking to-

Strengthens top of cone.

(Blustiation shows how cones rest entirely on this ring. Walls of cones do not touch.)

This new Cone is the result of years of study and the investment of many thousands of dollars. The manufacturers have aimed to make the very best cake cone possible, and at the same time keep the price within easy reach of every retail dealer.

Enterprising jobbers will be the first to show this new product in their territories. It is sure to be a winner for next season. Write for samples and very low introductory price.

MCLAREN PRODUCTS COMPANY



Western Distributing Station, Kansas City, Mo.





ICE CREAM



"Planned in Advance" Advertising Campaigns

Plans_

are essential to success. Napoleon says "For everything you must have a plan. Whatever is not considered in detail produces no good result."

Our "Planned in Advance"-

Advertising Campaigns have paved the way to success for many Ice Cream Manufacturers; we offer a distinctive service with a definite follow-up system.

As a consequence—

this systematized sales effort brings gratifying results at LESS COST PER GALLON of Ice Cream sold than the average amount usually expended for advertising materials without any service or directed sales effort.

No obligation—

is involved, and you assume no risk, so why not write us today and we will gladly submit a preliminary plan for your consideration?

The BURDICK-GARRISON COMPANY

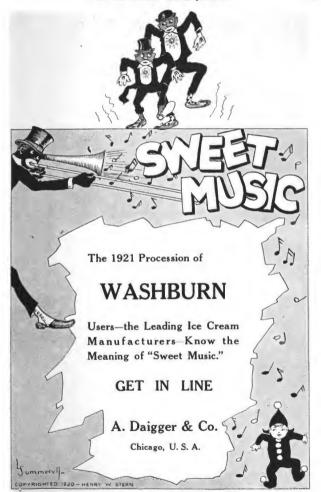
Two Twenty five Tourth Avenue New York

Advertising Specialists to the Ice Cream Manufacturer

THE NATIONAL DISH







OVER 2000
ICE CREAM
MANUFACTURERS
REGULARLY USE
GUMPERT'S
ICE CREAM
IMPROVER

S.GUMPERT & CO. Brooklyn, New York

The Grand Playids





Much of Your Success Next Season Will Depend on Your Choice and Supply of Ice Cream Cabinets



If there is any one thing the history of the ice cream cabinet business emphasizes, it is the value of anticipating requirements far in advance. From the standpoint of profits, and the service you will be able to render your customers now, right now, is the most opportune time to settle the cabinet proposition for next season.

If you are not familiar with the Grand Rapids Line this is the time to send for the catalog. It will show you why such a big percentage of the prominent ice cream manufacturers specify Grand Rapids Cabinets year after year. It will show you how to practice true economy in this department of your business.

The importance of immediate action must be stressed. Take up your requirements with us at once.

Grand Rapids Cabinet Company

Sucressors to CHOCOLATE COOLER COMPANY

80-84 Alabama St., N. W., Grand Rapids, Mich.

New England Sales Office and Warehouse Merrow Bros., Inc. 44 N. Market St., Boston, Mass. South Eastern Seles Office end Warehouse Cherry-Bassett Co. 33 So. Charles St., Baltimore, Md.

North Western Sales Office and Warehouse
A. C. Black
515 Lumber Exchange, Minneapolis, Minn

The C. Nelson Ice Cream Cabinets (Patented)

C. NELSON BRICK CABINET Patented May 8, 1906



42 QT. BRICK CABINET WITH ICE RAIL. Patenta, May 8, 1906; Sept. 9, 1919





"Confessed the best when put to test"
The C. Nelson Patented Ice Cream Cabinets are especially adapted to Hot Climates
— South America, Honolulu, Philippines,
Cuba and all Southern States, where
others fail.

We've Got It On Them All

Because We Are:

- 1st. Specialists in the manufacture of Ice Cream Cabinets.
- 2nd. Have had 30 years' actual experience in the manufacture and keeping of Ice Cream, from which practical experience the Nelson Cabinet was evolved.
- 3rd. Nelson Cabinets are constructed of California Red Wood and White Cedar. Both sanitary and everlasting.
- 4th. For this reason they are proof against Rust, Brine, Leaks and Decay.
- 5th. They are Insulated with Granulated Cork, the best non-conductor of heat and cold known.
- 6th. They will save their cost in three months' service.
- 7th. They will keep Ice Cream in perfect condition 24 to 36 hours with one packing of Ice and Salt.
- 8th. They will last a lifetime.
- We manufacture Ice Cream Cabinets exclusively, and build but one grade—This we guarantee.

The 42-quart brick cabinet has a two-compartment container, thus giving the advantage of a double cabinet with single ice space.

ATTENTION

Responsible parties (particularly wholesale ice cream dealers) may order from 1 to 100 Nelson cabinets, place them in practical use, and after 30 days, if not entirely satisfactory, return at our expense for freight both ways.

CATALOGUE AND PRICES UPON REQUEST

C. Nelson Manufacturing Co.

23rd and Division Sts.

ST. LOUIS, MISSOURI





ICE CREAM CABINETS

Are designed on principles that take into consideration the exact requirements of the Ice Cream maker-and built of materials that will assure greatest strength and durability for every dollar invested. They are all the name "Stout" implies.

Genuine Cedar Tubs

are built to last and give uninterrupted service. Compare the securely splined double bottom, firmly wedged into place, with the ordinary tub and you'll agree that Stout tubs are superior.

WRITE TODAY

for literature and prices Investigate the Stout fully before you buy, and your order will call for "STOUT" cabinets and tubs.

5aaaaaaaaaaaaaaaaaaaaa

Stout Crate Company Des Plaines, Ill.

Chicago Office: 509 S. Wabash Ave.



Economy Ice Cream Cabinets Economical—Efficient—Substantial

Most economical in use of ice—most efficient in preserving quality of cream—substantial construction and absolute insulation throughout. Most approved design and finish. Made in one to four compartment—sizes twelve and twenty quart. Either metal-lined or in tub cabinet.

A Word to the Ice Cream Manufacturer

Anticipate your requirements for the coming year. Place your order now and assure yourself of a complete supply of cabinets with which to meet the demands of your customers. Bear in mind: the sooner you order, the more promptly we can ship.

Write for prices and particulars.

Homer Manufacturing Company Homer City Pa.



Buy Cabinets Now!



While prices are down — market may become firmer as season progresses.

Schroeder Perfection Cabinets

Not only save in first cost but reduce your operating expenses as well.

"Insulation is the thing"

JOHN SCHROEDER LUMBER (

WALNUT ST BRIDGE ... MILWAUKEE, WIS.

BUY

The Quality Tub Covers

MADE BY

SCHOTT BROS. CO. WEST SALEM, OHIO

Pioneers in the Manufacture of Tub Covers

Ice Cream Cabinets

The special construction of cabinets made by us insures durability and long life under all conditions.

THE PRICE IS REASONABLE

Send for Price List

American Retinning Co.
819-23 N. Lawrence St., PHILADELPHIA, Pa.

Brooks Cabinets



Are constructed entirely of wood; best grade Gult cypress for outer case and white cedar for inner compartments or tubs. Tubs scientifically treated by secret process making them absolutely water tight. Cabinets interlined with granulated cork. Drain pipes and faucuts of heavy brass. Saves almost 55 per cest. of ice, sait and labor.

BROOKS CABINET CO. 1000 Block W. 27th St., Norfolk, Va.

CABINETS

"Built right, price right, ARE RIGHT."
"NO EXPERIMENTING WITH OUR CABINETS."



WE HAVE SPECIALIZED IN BUILD-ING ICE CREAM CABINETS FOR 15 YEARS, AND KNOW WHAT THE TRADE DEMANDS.

Before placing orders elsewhere WRITE FOR PRICE LIST AND DISCOUNTS.

HENRY SHULTZ

Office and Factory 24-26 Cherry Street, New York City

THE ice cream industry has been affected by the business depression less, probably, than any other industry of equal size in the country. General commercial inactivity merely coincided with the ice cream industry's usual seasonal inactivity. The purchasing power of the public has not decreased enough to cut off the general consumption of ice cream. The majority of the nationally organized supply men are planning their 1921 businesses on a belief in a greatly increased demand for ice cream from the public. All of them also are doing their best to keep prices low. They believe that orders of manufacturers for supplies, machinery and equipment needed for at least normal production should be made now, and if possible those for the expected increased production. They know that in the past forehanded buyers have reaped the greatest Summer profits.

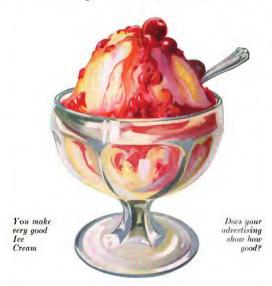


Safety to the Buyer through the Fair Practices Code



The Association of Ice Cream Supply Men 1328 BROADWAY, NEW YORK

Mathews Advertising helps you to be Independent of the weather



T' won't help your Profit and Loss Statement for 1921 to blame "Bad Weather" or "Unfavorable Business Conditions."

SEND A MEMO NOW

asking that one of our representatives see you and show the advertising and merchandising arrangements that scores of progressive Ice Cream Manufacturers are making to *Insure* good business for 1921.



FREDERICK C. MATHEWS COMPANY

"SERVANTS TO THE DAIRY INDUSTRY"

P. O. BOX 834

DETROIT, MICH.

This insert was produced complete by the Frederick C. Mathews Company

Excuses Are Just Excuses But Profits Are Profits



EXCUSES—blaming "Bad Weather" or "Poor Business Conditions"—Are not going to change a Loss into a Profit at the end of 1921.

The Mathews Organization is helping hundreds of Ice Cream Manufacturers who are out to "get the business" and who are not going to try to "pass the buck" when the Balance Sheet is made up for 1921.



FREDERICK C. MATHEWS COMPANY

"SERVANTS TO THE DAIRY INDUSTRY"

P. O. BOX 834

DETROIT, MICH.

This insert was produced complete by the Frederick C. Mathews Company

WHITE PARA-PARCH



We claim this filled stock is the most excellent Ice Cream Paper manufactured.

Its moisture and air resistance is unparalleled.

It is freely removed from the cream, is beautiful in shade and texture and 100% pure. It also is most economical.

Let us ship you a trial lot and convince you.

We furnish all sizes: squares and circles, plain and printed.

Made expressly for you by

The Henle Paper Manufacturing Co., Inc. 535-545 EAST 79th STREET, NEW YORK

Use Modern Methods

Conditions have made the supplying of liquid milk and cream difficult. An ice cream plant with steady production a necessity gains big advantages by using

Merrell-Soule Powdered Milk

Every plant always has its milk supply on hand. Make it as you need it and as much as you need. No loss of time, no waste, no souring. It saves ice, express charges and storage space.

Not only does it insure a uniform good quality milk, but it increases output,

Let our demonstrator show you at your plant.

Merrell-Soule Sales Corporation Syracuse, N. Y.

MERRELL-SOULE	SALES	CORPORATION
Syracuse, N.	Y.	
Gentlemen:		

P	lease	send	me	Free	your	book	"Merrell-
Sou	le Po	wder	ed N	filk f	or the	Dair	y, Cream-
ery	and	Ice	Crea	m P	lant"		

Name	• • • •	• • • • •	 • • • • • • • •	 • • • • • • •
Address			 	

ty..... State....

We Make Prompt Shipments of

Plain Condensed Mkil Concentrated Milk Sweet Cream Barreled Sweetened Condensed Milk

GIFFORD & CULLUM
OUALITY AND SERVICE

413 N. State St., Chicago, Illinois

Wood Ice Cream Spoons



(Pat. Jan. 14, 1916

Not a paddle but a spoon, scooped out of a wooden block

Just what the public has been wanting in the way of single service ice cream spoons. The most sanitary ice cream spoons made.

Paper Sundae Dishes

Paper Ice Cream Dishes
Both Round and Square

Tin Ice Cream Spoons

B. A. GRASBERGER & CO.

Manufacturers of Little Dishes
and Spoons in a Big Way

820-4 W. Moore St., Richmond, Va.

Order through your jobber. We have no brokers or agents.

A "MAKE IT PAY" IDEA

If a pleased customer is your best advertisement, why lose the advertisement nine times out of ten?

Tie Your Name to Your Product



Our tin ice cream spoons with your name stamped in the bandle cost no more—probably less—than you pay for the plain kind, and they tell the customer who pleased him ten times out of ten.

WRITE FOR PRICES AND A SAMPLE

Our New Ice Cream Catalogue Will be Mailed Upon Request



Freezers: tools: cans and carry-outs; brick moulds: brick tanks: tube; buckets; and a hundred and one other things on which you can make it pay to let us quote you Weisuse Catalogues of Baker's Gools and Viensils

Weissue Catalogues of Baker's Gools and Vtensils and Confectioner's Gools and Vtensils

THE MAAG CO.

509-511 W. LOMBARD ST., BALTIMORE, MD.





The Buyer's Page



GENUINE VEGETABLE PARCHMENT CIRCLES

30 Lb. Stock Parchment. Price per 1,000.

	A rice	be r	1,000		
4"	Diameter			8	.70
4.59	Dlameter				.75
5-	Diameter				.85
540	Diameter				1.00
6"	Diameter				1.15
614"	Dlameter				1.35
7"	Diameter				1.50
7.%	Diameter				1.80
8"	Diameter				2.05
8 14"	Diameter				2.25
9"	Diameter				2.55
915"	Diameter				2.85
16"	Diameter				3.15
104"	Diameter				2.45
31"	Diameter				3.85
1115"	Diameter				4.15
12"	Diameter				4.50
124	Diameter				4.95
13"	Diameter				5.35
13%"	Diameter .				5.70
14"	Dtameter .				6.15
144"	Diameter .				6.60
15"	Dlameter .				7.05
154"	Diameter .				7.50
16"	Diameter .				8.05
17"	Diameter .				9.00
18"	Diameter .				10.15
20"	Diameter .				12.60

"Discounts"

1.000	to	2,000							Net	List
2,000	to	4.000							Less	5 %
5,000	10	9,000							Less	10%
10,000	to	25,00	0	 					Less	18%
Over	25.00	0 lot			ı				Lens	2000

Net Prices on Printing Circles
Per color Per color Per color

up t per	1,000	per 1.000	124 and u
5,000 1	11.05	\$1.35	\$1.65
10,000	.75	1.10	1.50
20,000	.60	.90	1.25
50,000	. 45	.90	1.25
200 000	9.5	4.5	

These prices on printing are for MILL SHIPMENTS. For printing orders calling for prompt shipmest-DOUBLE the above printing prices.

63 LB, TUB LINERS

Complete with

63 11	Tub	L	ne	Te	. 1	15	* Parel	men	t Tor
and 1	2" Pa	ire	h	me	nt		Bottom	Circ	les.
Smail	lols.	٠.	٠.	٠.	٠.		\$40.75	per	1,000
1,000	lois.						. 37.00	per	1,000
2.000	lots.		٠.				. 35.50	per	1.000
3.000	lots.			٠.			35.00	per	1.000
5,000	lots.				٠.		22.00	per	1.000
10,000	lot#.						20.00	Der	1.000

FLAT PARCHMENT PAPER

Larger stree-1	4x17. 15x1	8, 13x46,	
15x20, 94x27,	13×13, 12×	36, t3x26,	
t4 5 x 52. 13 x 52. 1 Less than 50 lbs.	3824, 2283	10 29 Ib	
50 to 100 lbs			
160 to 300 lbs		.27 lb.	
200 to 500 lbs		.26 1ь.	
500 to 1,000 lbs		.25 lb.	
1.000 to 2,000 lbs		.24% 1b.	
2,000 lbs. and ov-	er	,24 lb.	
Printing Prices-	-Sizes Up	to 10x15.	
	Color	3 Colors	
Lots of P	er 1,000	Per 1,000	
10.000	\$0.65	\$0.90	
20,000	.50	.70	
30,000	.40	.35	
100,000	.40	.35	

PARCHMENT

THE accompanies like of particle meet products in as compiler on the product of t

Our stocks are equally complete in all products used by the dairy industry, Well gladly give you information and prices in anything you may need, from the smallest accessories to complete installations of heavy machinery.

GENUINE VEGETABLE PARCHMENT BOLL

20 Lb. Stock, Net Prices.

Less	than	50	lbs.	 					\$0.2	914	11
50	10	100	lbs.						.21	14	11
100	to	300	lbs.						.27	14	11
360	to	500	lbs.						.26	14	11
500	to 1	,000	lbs.						.25	14	11
1.000	to 2	000	lbs						21		11
2.000	lbs.	or e	over.			٠	٠	۰	.24	14	11

MILK CAN TOPS

11 x t 1	Inche	. Sealed packa	. 1.000 ge.	nheets to
Quant	ity	40-1b. per 1		50-1b. stock per 1,000
5,000	sheet	lots	82.17	\$3.96

50,600 sheet lots.... 2.83

PLAIN VEGETABLE PARCHMENT

		x11	
10,000		\$1.75	per 1,000
20,000		1 68	Der 1.000
50,000		1 62	per 1,000
100,000		1.56	per 1,000
200,000		1.53	per 1,000
Net Pr	ices, Print	nd 5×11 c	me Ceter
	for 1 1	b. Prints.	one Color.
10.000			
10,000		***** \$2.35	per 1,000
20,000		2.13	per 1,000
50,000		1.97	per 1,000
100,000		1.86	per 1,000
200,000		1.78	per 1,000
Add f	or TWO C	OLOR PR	INTING.
10,000.		\$0.20	per 1,000
20,000.		24	Der 1 000
50,000		18	per 1.000
100,000	lots	10	per 1,000

NET PRICES OF ADDITIONAL SIZES Plain 30 lb. Parchment Cut Sizes, 1,000

per 1,000.	Packs	ge, 2	5 or 3	6 lb.	stock.
****	10M	20 M	50M	100 M	200M
Shix 6h	Butte	r.			
8 x 9	1.48 Butter	1.43	1.38	1.33	1.20
9 x12.	2.15	2.06	1.99	1.91	1.88
2 - 9	2 21	1 20	1 04	1 00	

7 x 9.. 1.21 1.29 1.24 1.20 1.16 ½ Lb. Butter.
Stock printed (5½x6½) "¼ Lb. Net" and "½ Lb. Net" (7x9) Wrappers, are 35 cts. per 1,000 HIGHER.

1ce Cream Brick Wrappers.

10M 20M 50M 100M 200M

6Ux13. \$1.81.0 \$1.68 \$1.50 \$1.50

7 x14. \$1.80 \$1.89 \$1.76 \$1.70 \$1.67

Pint Bricks.

10 x13. \$2.57 \$2.58 \$2.39 \$2.30 \$2.55

Qt. Bricks.

10 x14. \$2.77 \$2.65 \$2.65 \$2.45

Qt. Bricks.

PARCHMENT TUB LINERS Order

This No.	in Lbs.	Weight of Stock	Price per 1,000
10	10	30 lbs.	\$7,50
20	26	30 1bg.	12.00
208	20	30 lbs.	16.50
260	63	30 lbs.	26.50
Prices o	nuoted ab	ove for 81	des only.
See Circ	le Price	Lint for ?	Tops and

"Discounts"

1,000 to 2,000 ... Net List
2,000 to 4,000 ... Less 57
5,000 to 9,000 ... Less 107
10,000 and over ... Less 207

63 LB, TUB LINERS Complete with

Cloth Top Circles

All Parchment 30 Lb. Stock.
Net selling price of complete sets of
43 lb. Tub Liners, 15' Cloth Top Circles, and 12' Parchment Bottom Circles.

 Small lots
 \$55.00 per 1.000

 1,006 lots
 50.00 per 1.000

 2,000 lots
 45.25 per 1.000

 3,000 lots
 47.75 per 1.000

 5,000 lots
 47.75 per 1.000

 10,000 lots
 46.25 per 1.000

 10,000 lots
 41.00 per 1.000



A.H.Barber Creamery Supply Co. 310 W.Austin Ave., Chicago, U.S.A.

2.54



Progress Ice Cream Freezers

Modern construction of the very latest type. Made in two sizes, 50 quarts and 100 quarts capacities. Compact motor drive, with motor mounted above the freezing cylinder. The picture shows the front and side view with brine connections. Substantial enamel base, with machine properly balanced. The cylinder, supply tank, etc., are heavily nickel-plated. An excellent appearing machine of sterling worth and honest value.

The dasher is of the squirrel cage type, with two full sets of scraper blades. The inside section of the dasher turns one way and the outside the other way. This type of dasher gives maximum results and is easy to clean.

The opening for the fruit is made large so as to do away with the fruit funnel. Your man can put the fruit in without spilling or wasting any portion of it. The supply tank is of the proper size to prevent waste. The valve from the supply tank to the cylinder is simple, handy and satisfactory.

The gate is so made that one setting of the can under it will catch the cream—you don't have to kick the can into place—preventing waste.

The brine piping is hooked up so as to feed it into the space surrounding the freezing cylinder at

two places, getting excellent efficiency out of the brine. One thermometer shows temperature of brine going in, and the other shows it going out.

The gearing, on the back end of the machine, is so housed in as to run continuously in oil. The motor covering is left open at the back to prevent overheating, yet it is protected on the front and sides so you can use a hose in cleaning without splashing water on the motor.

splashing water on the motor. Write for descriptive matter and prices. We also make a 40-quart vertical and a 50-quart direct ammonia expansion style for the man who prefers either of these types of Ice Cream Freezers. Tell us in a letter, or on a postal card, what you want to do and we will help you plan and choose the best for your needs.

DAVIS-WATKINS DAIRYMEN'S MFG.CO. ADDRESS NEAREST SALES OFFICE

JERSEY CITY, N. J. NORTH CHICAGO, ILL. KANSAS CITY, MO.



DENVER, COLO. SAN FRANCISCO, CAL. SEATTLE, WASH.

MAKERS OF THE FAMOUS DAIRYMEN'S CANS

THE ICE CREAM TRADE JOURNAL

Vol. XVII

NEW YORK, FEBRUARY, 1921

No. 2

IOWA ASSOCIATION'S ANNUAL COMVENTION

Ice Cream Men of Hawkeye State Hold Well Attended Meeting at Waterloo-Fair Practice Code Adopted

The first session of the eleventh annual convention of the Association of Ice Cream Manufacturers of Iowa was called to order at the Russell-Lamson Hotel, Waterloo, at 2:30 p. m. on January 17 by President A. Fleutsch, Dubuque.

After making a few announcements the President introduced N. W. Frisbie, Mayor of Waterloo, who welcomed the ice cream men to the city of Waterloo. W. S. Wilcox, Mason City, vice-president of the Association gave the response.

The President called on Secretary Paul W. Crowley, Des Moines, who gave the following report: I wish to submit for your consideration the following outline of work of the secretary of your association for the year beginning February 1, 1920, and ending January 1, 1921:

ending January 1, 1921:
Your Board of Directors, following their election at the last annual convention held in Des Moines, January 28, 29 and 30, 1920, left in effect the arrangements for raising funds to support the organization namely: a membership fee of \$5.00 and dues at the rate of \$1.25 per thousand gallons of ice cream sold in the state, payable the 10th of the month following that during which the ice cream was manufactured. Your secretary was instructed to follow out as closely as possible the outline reported to the convention for work to be undertaken during the year.

At the various district meetings which were held during the month of February, plans were discussed for the working out of a system of extending credit to secure a prompt return of lee cream combers. At cach of these district meetings delegates were selected to represent the sentiment of each group meeting. These representatives gathered at the Chamber of Commerce of Des Moines on April 5. At that meeting the secretary submitted a plan which is in use in the state of Nebraska for listing various ice cream dealers as to the amount of credit which should be extended. The secretary was instructed to put this plan into effect and in accordance with this, two ratings have been sent out from this office, the first on June 10, and the second on August 14. I wish to say that we are going to have the pleasure of listening to the secretary of the Nebraska Association to the secretary of the Nebraska Association will comment on this plan worked out in that state. No doubt some of the Nebraska members who are also members of our association will comment on this plan. I wish at this time to point out the fact that owing to the

so-called strenuous times which we have been going through, and no doubt will be called upon to go through for some time, that we all give this matter of extension of credit the attention it merits and all work together for the prefetching of our interests.

ol extension of credit the attention it merits and all work together for the protection of our interests. The secretary pointed out to the delegates the transport of the protection of the protection of the control of the control of the control of the protection of the control of the protection of th

The matter of transportation during the past season has been one which has merited the attention of the association and I believe that we have no reason to complain as to the treatment which has been accorded the ice cream manufacturers as compared with previous seasons. Arrangements were made with the transportation manager of the Harding Cream Company of Omaha to represent our association at the hearing before the Interstate Commerce Commission at Washington where application was made by the express company for increased rates. This representation when the proposed of the proposed

While I believe that you have all experienced a successful season from the standpoint of financial gain. I do feel that our volume has been considerably curtailed owing to the prices which appear to me to excessive on retail sales. I feel that the revenue which is imposed on retail sales of ice cream has been as much responsible for this as any one thing and that our efforts should be continued in looking toward the repeal of Section 630 of the 1918 Revenue Bill.

I am wondering how many of you realize that there are only two commodities which are taxed at the point of manufacture at rates greater than the tax of ice cream at the point of retail. I am also wondering if you realize that other so-called luxuries in large numbers are taxed at the same rate and less than ice cream at the point of manufacture where our product is taxed on an average of about 15 per cent. As stated before, I think we have had a good season but it is impossible to calculate how much better it would have been had it not been for the price which has been asked by the retailer which in a number of cases has been increased out of proportion to what it should have been increased simply on account of the tax. We have taken this matter up on different occasions with our representatives in Congress, some few of whom have continued to refuse to reply to our communication regarding this subject. I am very glad to report to you that through co-operation with other trade organizations similar to our own, namely; through the Dairy Council, we have had a representative in Washington during the past week who will undoubtedly report to us something during the convention the sentiment of our Congressmen toward the repeal of this section.

Your secretary was instructed to give this tax matter consideration and see what could be done to secure the co-operation of neighboring states. pleased to report to you that both the states of Kansas and Nebraska are working on this matter and I am in hopes that through our efforts other states will take similar action and eventually the National Association will give this matter the consideration, possibly through the National Dairy Products Committee, which it merits.

Your secretary was instructed to secure as many new members as possible during the season and will say that my report on this is not as encouraging as I had hoped it would be. Last year we had some eighty-seven active accounts. This year we have ninety-four. We have lost two accounts owing to the fact that they were operated by manufacturers who did no shipping business whatsoever; two accounts were lost owing to the fact that the factories were taken over by other members of our association; seven accounts were lost and I can give no explanation for the same. Consequently in summarizing our report will say that we have lost during the past year eleven accounts and gained seven making a total gain in new members of eighteen and a net gain to the association of seven. I wish to suggest that the members, active and associate, co-operate to secure the return to the fold these seven manufacturers who have strayed away. They, together with four or five new members who have not affiliated with this association, I believe, would put us in position to state that the membership in this organization is practically 100 per cent.

In addition to the active members for the past year we have thirty-seven associate members to whom I am sure we are all grateful for the spirit of cooperation which has been extended to us during the past season. I do not believe that we can too strongly culist the co-operation of these associate members and it is no more than fair that all things being equal that the associate members should receive the preference over non-associates.

After giving his financial statement, the Secretary concluded his report as follows:

I wish to state that I believe the Dairy Council is in a position to function to the advantage of the dairy interests during the coming year and I have estimated that our association should be in a position to contribute toward constructive work on the Council \$1000 during the year 1921; this together with the estimate made by the various associations will make up a budget approximately of \$16,000 which will be put into constructive work looking toward the de-velopment of the production and consumption of dairy products.

I would recommend that during the coming year that our interests be devoted as in the past year to developing the spirit of friendliness and co-operation among the manufacturers and help them to realize that their competitor should be looked upon as their best friend, he being in a position to dictate whether or not your business shall be a profitable one.

The matter of transportation during the coming season will continue to come up and should be given consideration.

I believe you should continue your efforts in co-

operating with the Dairy and Food Department. Your efforts looking toward the repeal of Section 630 of the 1918 Revenue Bill should be even more

strenuous than last year.

I would suggest that one of the main topics for discussion to be taken up during this convention is that of working out a code of ethics, or perhaps a better term to be used might be a list of unfair practices which have crept into the business since its inception and which have had a tendency to work to the detriment of the same. In other words, a list of unfair practices should be worked out at this convention and the same be later presented to the manufacturers operating in the various districts at their district meetings for their approval or rejection. Let us all bear in mind that quality and service are the two things which every ice cream manufacturer should try to give his customers in return for fair prices and which will leave the manufacturer a reasonable profit for his efforts. By keeping these things in mind our industry will thrive.

wish to thank the members for the co-operation extended me during the past season and sincerely hope that whoever your secretary may be during the coming season that you will lend him the same co-operation which has been extended to me during

the past season.

Treasurer, Edward Hruby, Manchester, submitted the following report:

I hereby submit to you the following report of receipts and disbursements of this Association for the year January 22, 1920, to January 17, 1921:

Total amount paid out on orders...... 5073 66

Balance on hand, January 17, 1921............................ 1592.73 President Fleutsch addressed the Convention as

It is gratifying to see such a large attendance and it is very evident that the spirit expressed in the happy faces that everyone found the accomplishments of the Ice Cream Manufacturers' Association well worth the while to them to take a couple of days at least to meet the other manufacturers of the state, and to clasp hands and exchange the newly accumulated ideas to each other.

I earnestly urge you to put a little stress on the occasion of being here at this convention-that you will see to it from a business standpoint that you gather all the possible information that you are most interested in. Do not wait for anyone to introduce you-introduce yourself. The occasion will be just as big as you make it-the returns will be accordingly.

Every man's business is a problem and you will readily agree with me the problems of the ice cream manufacturers are not less, if anything more, of a problem in my estimation than they ever have been. The problem that seems to puzzle you the most, is the one that you should endeavor to find an interesting party whose interest in solving a problm for you will be equally as good to him as to you because we want to help each other and we are all engaged in the same kind of business and problems more or less. This certainly is the place to work them out and I talk from experience, and in every case that I ever attended a convention I made it my business and succeeded without exception of finding a great deal of help which was very valuable.

In no case did I ever feel that the expense account of the time and money spent at a convention, a failure but a good investment. I'll assure everyone present that if you work as hard as you occasionally have to in business seeking for this information you will find it here. There is some one always looking for some one who is willing to work hard and to discuss these various problems and the good work is on. There are many subjects you can cover if you'll only try as this is the clearing house of ideas and should

be used to the best advantage.

It gives me great pleasure of being honored by being your leader for the second year and hope that I have served you in a satisfactory manner. In my settmation, the Association in a general way is a great success and your co-operation with the mancial support and otherwise that you have given to the association is very much appreciated by the officers and directors. The success of it is not due to any one individually but to the united effort of all the members who made the work not only a success but a pleasure. In hopes that the support will be carried on year after year in which we will accomplish many more things that may be possible as the time goes on.

I wish to urge upon this convention ways and means of eliminating of tax retail sales, thus possibly being the means of considerable help in reducing the price of retail sales by the dispensers. seems highly appropriate in the interest of the general welfare, that we unite at this time in establishing a center of influence in the ice cream industry-where the most highly co-operative relationships may be developed between the retailer and the manufacturer. The conditions are somwhat critical and early concentrated actions are necessary to give matters along that line considerable consideration during this convention. Labor and agriculture have a common interest in the ice cream industry and each is exerting a well organized influence at present. We should all get together to boost the dairy industry of which ice cream manufacturing is an imof the problem as to help, material and manage-ment. Yesterday we danced and today we pay the The history of business is crowded full of similar development. We have heard and read a lot about reconstruction and readjustment. Getting back to pre-war conditions, as they call it, I'll say our course should be to go ahead. Our problem of yesterday, nor of tomorrow, but of today and today s for accomplishment. If we will only back up our hopes and efforts with confidence and courage we will get the inspiration and belief in the development of a united effort and brotherly ideals going hand in hand with the most cordial relations between all whom come in contact in principle and policy favorable to its cheapening costs and improving the service to one another.

"The Value of Ice Cream in the Diet of Children," was the subject of an address by Mrs. L. M. Fetherston of the Elizabeth McCormick Memorial Fund, Chicago. Following Mrs. Fetherston's address piecures were screened showing what the work of the Elizabeth McCormick Memorial Fund has accomplished.

The meeting was then adjourned to a business session.

At 9:00 a. m. Tuesday a demonstration of the making of fancy ice cream was given by Robert

Murch of the Allen Ice Cream Co., Rockford, Ill. L. W. Moore, Omaha, Nebr., opened the program of the morning with an address, entitled. "Transportation Problem." Following Mr. Moore's address was a discussion on service received from the express company. After much discussion it was moved and seconded that the Chair appoint a committee to take care of all claims made against the express company, and recommended that Mr. Borman be made Chairman of this committee. The motion

The Chairman called on W. B. Barney, State Dairy and Food Commissioner, who spoke on some of the things which he thought was important to the ice cream industry. Mr. Barney said:

Now. I do not know that all of you remember about the situation which came about something like ten years ago when we had an ice cream law enacted. How the law came about-trouble over the state as to the difference of butterfat which was contained in our ice cream. A manufacturer of ice cream lived at Hampton and made a very good quality, bringing it up to twelve or fourteen per cent. A little later a man located there from Mason City. (We had no ice cream law at that time). This party began putting out a product that contained about three or four per cent. butterfat. My friend began complaining to me about the trouble his com-petitor was making. He had a friend who was in the Legislature at that time and he asked Mr. Beebe to take it up with me about getting a law that would We had a law on the standard for regulate this. milk and we should have one for ice cream. not know much about ice cream work and I went to work to get in touch with the ice cream manufac-

turers of this state to get something on this matter. We have a Federal standard, or Federal ruling, of 14 per cent. This might be a little high. I went after this matter without as much advice as I could get now if I was to take it up at this time. I thought a 12 per cent, standard was about right or a reasonable standard. In looking over the various laws of different states I found some above and some below, and many states did not have a law at all. So we requested a law written for 12 per cent, standard. We had bearings on this matter and the committee reported the bill for acceptance and it was passed.

We have a much better grade of ice cream than they have in Illinois. So far as our standard is concerned I think it is nearly right, but I am in favor of a uniform standard not only of the ice cream, but on other commodities and I think we should continue on this I2 per cent. standard until we can use it for sort of a trading proposition to bring Illinois and the other states up to a 10 per cent. standard. I do not believe that I could go into the Legislature and recommend a 10 per cent. standard as I do not believe I could give a good enough reason why they should enact a law for a 10 per cent. standard, but if I could go in and say that I think a uniform standard was better than what we have and then try to get them to fix this law for a 10 per cent.

You have had a lot of trouble in regard to the return of packers and the condition in which they are in when returned. I think that possibly we have been of considerable service to you in this matter. I cannot do a lot of writing to men to return your containers until I hear from you. If you will write to this Department anytime you do not get a reasonable return of your packers, we will then write the party a letter and send a carbon copy to the party a letter and send a carbon copy to the party a letter and send a carbon to think. It can be the party and the party and

packers. We prosecute them for unsanitary condition in which we find them and we have them understand that they would not be in this condition had they been returned at the proper time and I know it has done a lot of good and has brought about fairly good results.

In regard to the war tax on ice cream-I do not see why ice cream should be taxed whatever. It is no longer looked on as a luxury. Why should ice cream be taxed any more than butter or milk or any other commodity. I am with you and against this

tax on ice cream.

Now just a word about the advantage of the Association. I never was brought in close contact with this Association until you had a secretary and will say that you have an efficient one. He keeps me in contact with the things that come before you. When anything comes up and he feels that we are justified in getting into the work, he calls me up and we talk it over. We do not always agree but I always like to listen to a man and give his matter consideration. I want to be fair and I feel that your secretary is the same kind of a man. I do say that the organiza-tion is a fine thing and having an active working secretary is a great advantage to you.

The President said:

I am sure we have enjoyed the talk by the Commissioner and we should appreciate the fact that he has authority to work with us and that we have an organization that the authority will work with. We will now be favored with a talk by Prof. M. Mortensen, Ames, Iowa, who will speak on the subject of "What the College Is Doing for the Ice Cream Manufacturer."

Prof. Mortensen said:

I am not so certain that you are so much interested in the subject which was assigned to me as we are to have you become interested in the College as much as possible. The work of the Agricultural College may be divided into three parts, namely: Teaching, Extension and Research. We have a six months' course for dairymen to train men who will go out and operate the dairy factory. This is for men who have had limited experience, say a year or less, and for men with three or four years' experience, a ten days' course is offered, and a four years' course for men who desire a more thorough training along the line of agriculture or dairying as a specialty. The men who can think are the ones who are going to accomplish the work.

Some of the problems we take up with our students are quality, economy, adaptability and character. It is essential for the men who take up this line of work in dairying that he understands quality. Quality is what sells, Economy is another thing that all ice cream manufacturers must consider. have many things to consider such as overrun, care of equipment, etc. Refrigeration of amount of cold storage you have. Refrigeration depends upon the

Adaptability:-The man who does not possess adaptability is not going to be a good ice cream man.

He must like his work and therefore we try to enthuse the man as much as we can. Character: I do not believe that a school is per-

forming its duty to the state and nation if they do the class of men that you would like to have in your homes, we believe that is the greatest thing that can

be accomplished.

The research work is to take up and solve such problems as would be of advantage to the ice cream manufacturer. We are perhaps in a poor position to carry on such work as we should but we are this year asking for money and within another year we hope to have a new building so that we can put on a force to have work along that line. National movement has been started which they call the National Research Laboratory composed of

the milk dealers and the ice cream manufacturers to establish a laboratory at Washington.

The meeting was adjourned.

The afternoon session was called to order at 2:45 p. m. by the President who called on Roberts Everett. Secretary-Manager of the National Association of Ice Cream Supply Men. Mr. Everett told of the work they were doing among the manufacturers of ice eream to make their industry better and more profitable. He also explained their Code of Unfair Practices and if a member was found guilty he was liable to expulsion from the Association.

At the request of Mr. Everett, J. L. Nelson then made a few remarks in behalf of their Association, especially emphasizing the Code of Unfair Practices and read the following from a letter written by Mr. Martin, President of the National Association of

Ice Cream Manufacturers:

Unqualifiedly, I wish to endorse the Code of Ethics that has been adopted by your association. It certainly is a step forward for the bettering of business conditions, and too much credit cannot be given your association for taking such action. In fact I think a Code of Unfair Practices should be adopted by all national organizations, and I have in mind having the National Association of Ice Cream Manufacturers adopt something similar. Your association has payed the way for our doing so.

Mr. Ostrom, President of the Poodle Dogs' Association, then gave a talk on the work of the Poodle

"The Cost of Manufacturing Artificial Ice," was the subject of an address by J. M. Speed, Des Moines. In his paper Mr. Speed analyzed the different factors involved in the manufacture of ice.

Mr. Northey, Waterloo, gave a short talk on "Cooperation in Business" after which the meeting was adjourned to a business session.

The lasting meeting of the convention was called to order at 10:20, Wednesday morning by President Fleutsch.

F. W. Gentleman, Omaha, spoke on the subject, "Extension of Credit to Ice Cream Customers." He presented in a brief way the credit proposition as the Nebraska Association has worked it out, stating that at the beginning of the year every manufacturer in the state sends to the Association a complaint list of his accounts classified according to their habit of paying their bills.

"Keeping Account of Empty Packers" was the subject of a paper read by C. J. O'Neil, Ames.

The convention was then adjourned to a business session at which the reports of the committees were given including the following report of the resolution

BE IT RESOLVED: That this Association extend its heartfelt thanks to the ice cream manufacturers of Waterloo and to the management of the Hotel Russell-Lamson for their untiring efforts in entertaining and looking after the comfort of this Associaton during its sessions.

WHEREAS: The Dairy Products of the State of Iowa amount annually to the sum of \$150,000,000.

BE IT RESOLVED: That we the members of this Association respectfully ask the Legislature to make an appropriation of sufficient amount to erect a Dairy building on the Iowa State Fair Grounds, as request in the Report for the Dairy and Food Commissioner

BE IT RESOLVED: That this Association express its appreciation for the hearty co-operation extended to the ice cream manufacturers of the State by Prof. Mortensen and his department at the State Agricultural College.

WHEREAS: Certain elements in our state have seen fit to belittle the efforts of Commissioner Barney and by so doing minimized the effects of his good work.

by so doing minimized the effects of his good work. Be IT RESOLVED: That we go on record as expressing our lack of sympathy with all such activities, and Be IT FURTHER RESOLVED: That we go on record as heartily approving the excellent work of his Dairy Department in all phases of its activities, and

especially for the excellent work he has done for us in facilitating the return of our tubs and cans.

WHEREAS: The Lord in His all wise Providence has seen fit to take from this life Food Inspector M.

WHEREAS: The Lord in Fits all wise Providence has seen fit to take from this life Food Inspector M. E. Flynn of Burlington,

BE IT RESOLVED: That this Association extend its

BE IT RESOLVED: That this Association extend its sincere sympathy to his bereaved family and that a copy of this Resolution be forwarded to them.

He it association. That the thanks of this organization be extended to our officers, executive board, and especially to Secretary P. W. Crowley, for their excellent work during the past year, and that we heartly endorse the retention of Secretary Crowley by this Association.

E. J. SHIMA, LEWIS RICHARDS, F. W. GENTLEMAN.

The following declaration against unfair practices was adopted by the Association:

ROSOLVED: 1. That any member calling customers over the 'phone for orders; reversing the charges on calls put in by customers, or paying for telegrams sent in by customers, is hereby considered

RESOLVED: 2. That all discounts to customers are to be tabooed and are to be given on no condition whatsoever, regardless of quantity, is hereby considered unfair.

RESOLVED: 3. That for any dealer to deliver ice cream with his own trucks unless he makes a charge equivalent to the express rate, is hereby considered unfair.

RESOLVED: 4. That the rebating in any form, on quantity or otherwise, is considered unfair.

RESOLVED: 5. That the making of a lower price on ice, or any other commodity, or refusing to sell altogether to a dealer in order to get his ice cream business, is hereby considered unfair.

RESOLVED: 6. That the giving or loaning of cabinets to obtain new business, or for any other purpose, is hereby considered unfair.

RECOM MENDATIONS

1. We recommend that all cabinets now in the hands of the retailers be disposed of as quickly as possible to the best advantage of the manufacturer.

2. We recommend an extra charge of 10 cents

per gallon on all shipments of three gallons, and 25 cents in addition to the 10 cents on all one and two gallons—over the five gallon price.

3. We would recommend in regard to coloring of

 We would recommend in regard to coloring of cream that this be left optional with each manufacturer.

4. We recommend that differences arising among competitors be adjusted between the competitors if possible. If they cannot come to an agreement, the following plan of arbitration is suggested: Each party to the controversy select a representative; these two representatives to select a third, thus making up a board of arbitrators consisting of three, both parties in the controversy agreeing to abide by the decision of the arbitration board.

The following officers were elected: President, W. S. Wilcox, Mason City; vice-president, C. J. Hutchinson, Jr., Des Moines, and treasurer, A. B. Sayles, Ft. Dodge. Directors: George Irwin, Des Moines; A. F. Urich, Dubuque, Henry Tyler, Villisca, and R. T. Penders, Oskaloosa.

It was decided to hold the next annual convention at Cedar Rapids.

TEXT BOOKS FOR NEW CITIZENS

Among the text-books that have been compiled for the use of the alien who desires to become a citizen, those prepared in the Bureau of Naturalization of the Department of Labor have been found very useful. Many of the industrial classes for the foreign-born worker have derived a great deal of benefit from the aids furnished by this bureau.

The schools of the Nation are intrusted with the task of giving instruction in citizenship to the great numbers of foreign-born residents of this country, and the text-book prepared by Mr. Crist, Deputy Commissioner of Naturalization, with the aid of the teachers of citizenship classes, is designed to fit aliens to fill useful places in the life of the community and to fulfill loyally their duties to the land of their adoption.

The book is arranged to serve not only as a textbook of government and an exposition of American ideals, but to assist in the education of the student in the English language. The first few lessons are prepared in a way to suggest to the teacher methods of drill for classes more or less deficient in knowledge of English.

The machinery, methods, and theory of government are discussed, the Constitution and the Declaration of Independence are reprinted, and the various ways in which the Government touches the citizen in his daily life—through the post-office and other agencies—are described fully.

The Bureau of Naturalization makes no attempt to induce foreigners to become citizens, but it offers every facility in its power to those who are desirous of making America their home, and aims not only to instruct them in their rights, duties, and privileges under the American law, but also in American manners and customs, which may differ from practices in their native lands.

A highly important development of this work was the establishment of information bureaus for aliens, where foreigners may obtain without charge information on almost any conceivable subject.

The object of the Bureau of Naturalization in all its activities is to make the alien feel that America is friendly to him and that the Government seeks to aid him in his work and in his home life. The text-book is being prepared in large numbers for distribution among the foreign-born, but it does not become the property of the student until be has attained American citizenship.

Don't always blame the cooling system when the engine overheats. The mixture supplied by the carburetor may be causing the trouble.

DAIRY INDUSTRY OUTLOOK

By E. W. Chandler
President, The Greamery Package Mig. Co.
The new year brings golden promise for the future of the great two billion dollar dairy industry. Opportunities for those in this wonderful business were never more plentiful. The country as a whole is on the borderland of great developments. We are in the soundest financial, industrial and political condition of any nation in the world.

Business for the year just ended started off with unusual energy and each month saw the previous month's business excelled. But toward the end of the year the buying public revolted against paying what they considered excessively high prices and business in many lines slumped.

However, because of the fundamental strength of the dairy industry-except in a few isolated instances -it was scarcely affected. Surely this is a lesson that we can take to heart. A business that pursues the even tenor of its way through good times and bad times is a business that we can well cherish and we can thank our good fortune for being part of it.

We can go ahead with our plans to build and expand with the knowledge that flurries in finance and other business ills will not disturb what we have

The decline recently in the prices of cereals will undoubtedly increase the production of milk. Farmers are realizing with renewed emphasis that dairying is always dependable-it is an anchor to windward-and the greater the flow of the milky way the greater the entire dairy industry and the country generally will benefit.

In spite of renewed activity in many European countries, there is still great shortage of dairy products abroad-and America must supply the shortage, not only of dairy products but of dairy cattle as well. The markets of the world demand our products and a great American mercantile marine is prepared to transport them.

Now that foreign exchange is on the gain and the incoming administration is pledged to make peace with our late enemies, our export trade in dairy products is bound to increase during the coming year. It seems certain also that Mexico's troubles are about at an end. She will undoubtedly be a heavy buyer of dairy foods and dairy cattle.

Another thing that should encourage us in the dairy industry is the increased realization on the part of the public of the food value to them of dairy products. This is due to the efforts of the government, the activity of the national and state dairy councils and the advertising to the public by the various dairy product manufacturers and distributors

We have had, furthermore, a year of prohibition which has stimulated the consumption of dairy products and which will increase this consumption to a greater extent during the coming year. People will use less and less of soft drinks for refreshment as time goes on and more and more of dairy drinks. The latter are not only refreshing but healthful as well.

Everything points to a safe, steady growth of the dairy industry. We are cooperating and working hand in hand for the common good. For years we have realized our duty to the public-the necessity for improving our products and our methods. Now that we are cooperating better we are realizing that in turn the public owes us something and that by a united stand and a common purpose we will get the justice, the remuneration and the respect that is due the fourth greatest industry in the country.

LOUISIANA ORGANIZED

On January 26, at a meeting of the ice cream manufacturers the Louisiana Association of Ice Cream Manufacturers was formed. The meeting was held at Hotel Bently Alexandria. Among the chief efforts of the Association in the immediate future is to urge upon manufacturers the necessity of manufacturing a high standard of ice cream, and at the convention a resolution will co-operate with the State Board of Health in enforcing a high standard of ice cream product.

W. W. Campbell of Shreveport was elected president; E. R. Harris of New Orleans, vice president; N. F. Manning of Monroe, sec.-treas.. The following directors were elected; F. T. Breitzke, Alexandria; E. L. Murphy, Baten Rouge; A. A. Lav, Natshitoches, Following is a list of the members not mentioned above: S. M. Sutton, Vicksburg; Miss J. H. Orvin. Monroe; L. M. Gill, Alexandria; C. A. Kent, Kentwood; Ben C. Brown, New Orleans; A. M. Thornton, Shreveport, and E. B. Watson, Lake Charles.

The object of the Association is to establish and maintain a friendly and closer relation among those engaged in the manufacture of ice cream; to promote and safeguard the interests of it members; to take united action on all matters pretaining to and affecting the trade at large.

A resolution was also passed to fight the express increase on weights of ice cream on intra-state shipments which the express company had asked to go into effect in Louisiana on February 4.

NEWTON F. MANNING. Sec-Treas.

PRICES STILL DECLINING

The general level of commodity prices as measured by Dun's index number declined in January for the ninth consecutive month, and at the beginning of February was 29.4 per cent. below May's high record. The January decline was 6.2 per cent., against a drop of 6.2 per cent, in December and a maximum recession of 6.8 per cent, in November,

"As a result of last month's further deflation," Dun's report says, "the February 1 total of \$185.822 marks the lowest point reached in exactly four years, and the advance over the pre-war basis, which at one time exceeded 118 per cent, has narrowed to about 54 per cent. The index number has, therefore, lost considerably more than half the rise which occurred through the war period and afterward and is 26.8 per cent, under the figure of a year ago, when the price tendency was still upwards."

SUPPLY MEN HOLD ANNUAL BUSINESS MEETING

The Association of Ice Cream Supply Men Meets To Review Past Year's Work and Discuss Policies For the Next Twelve Months

The second annual business meeting of the Association of Ice Cream Supply Men was held in the McAlpin Hotel, New York, N. Y., February 7. O. S. Jordan of Brown & Shaw, New York, was re-elected president, Harvey H. Miller of the Miller Pastcurizing Machine Co., Canton, Ohio, vice-president, and Thomas D. Cutler of The Ice Cream Trade Journal, New York, treasurer. Personal representatives of about twenty-five firms attended, many of whom were present as proxise for other members also.

Following the reports of officers and committees various old and new business was taken up and considerable discussion was held leading to a determination of the association exhibitions policy for 1921. A motion was unanimously carried leaving the matter in the hands of the loard of directors. The secretary reported that official invitations had been received to hold exhibitions in Jacksonville, Fla., Raleigh, N. C., St. Louis, Mo., St. Joseph, Mo., Louisville, Ky., Washington, D. C., and New York, N. Y.

A brief survey of the conditions in the ice cream industry and in the Association was contained in President O. S. Jordan's report, which was followed by the report of the secretary-manager, Roberts Everett. Giving as, in his opinion, "the most important fact of the year the prominence and good will that has heen accorded the Association by the buyers of the country," Mr. Everett read a report covering in detail the activities of the Association since March 3, 1920, in part as follows:

Members: The number of members has increased from 80 to 86. Geographically membership range from coast to coast. In products manufactured or services rendered, the membership represents more than 150 varieties, including every manufacturing and marketing essential of an ice cream plant.

and marketing essential of an ice cream plant.

Adaptarters and Staff: The Association saff of lacadparters and the Assistant Secretary-Manager, Miss K. M. Gaffney, Credit Department Manager, Miss K. M. Gaffney, Credit Department Manager, Miss Florence Allen, Miss Margaret Bunger and Miss Margaret Frommer. The Association headquarters are being used more and more by members and salesmen when in New York City.

Exhibitions: An Eastern Exhibition of supplies, equipment and machinery was held in Atlantic City September 20 to 25 inclusive, 1920. Co-incidentally, the annual convention of the Association of Ice Cream Manufacturers of Pennsylvania and a directors' meeting of the Association of Ice Cream Manufacturers of New York State were held, and a large delegation of members of the New England Association were present for an informal meeting. There were 79 rechibitors occupying 149 booths. There was a registration of 1,200 persons, of which over 600 were ice cream manufacturers.

An All-Pacific Exhibition was held in Portland, Oregon, November 15 to 20 inclusive, co-incidental with an annual convention of the Pacific Association of 1ce Cream Manufacturers. There were 80 exhibitors occupying 100 booths. There was a registration of more than 400 persons, of which more than 200 were ice cream manufacturers. A new policy in exhibitions was introduced, the admission of the gen-

eral public at stated hours. This policy justified itself by the attendance of more than 4,000 citizens of Portland all of whom must have obtained a more comprehensive idea of the value of ite cream and the size and importance of its industry than they had had before.

Printed Advertising: Persistent advertising of the Association has been carried on. Trade publication advertisements have ranged from the presenting of market conditions to buyers to advertising particular exhibitions. Of advertising direct-by-mail to manufacturers throughout the country between 150,000 to 175,000 preces have been sent out. These have ranged from advertisements of particular exhibitions to important addresses by officers of the Association.

to important addresses by officers of the Association. Addresses have been made by officers, directors or sociation of Ice Cream Manufacturers, the Association of Ice Cream Manufacturers, the Association of Ice Cream Manufacturers, The Association of Ice Cream Manufacturers, North Carolina Association of Ice Cream Manufacturers, North Carolina Association of Ice Cream Manufacturers, North Carolina Association of Ice Cream Manufacturers, California & Southwestern States Association of Ice Cream Manufacturers, California & Southwestern States Association of Ice Cream Manufacturers, California & Southwestern States Association of Ice Cream Manufacturers, California & Californ

A one-reel motion picture made of booths and visitors at the Eastern Exhibition has been shown before conventions of the New York State Association, North Carolina Association, Southern Association, Iowa Association, Wisconsin Association, Iowa Association, Wisconsin Association, and Association and Ohio Association at an entertainment in Chicago, and to many interested visitors to the Association is neadquarters. A gilt-enameled button, a reproduction of the Association Seal, has been issued to all accredited representatives of member firm and hutton similar in appearance of the Salesmen's Club. These buttons are now worn in calling on ice cream manufacturers and at achieving the seal of the Salesmen's Club. These buttons are now worn in calling on ice cream manufacturers and at achieventions by several hundred persons.

The Association has received much printed notice from outside sources. It has been mentioned above 225 times in trade publications. It has received mention in newspapers about 125 times. These references to the Association have varied from single paragraphs to several pages or columns each.

The Association's activities have been favorably commented on by several other trade and industrial organizations in the country, principally in connection with the adoption of the Fair Practices Code.

Entertainment: One entertainment has been given by the Association to the members of the National Association of Ice Cream Manufacturers. Members of the latter organization in attendance at an annual convention in Chicago, October 13, were driven to a Chicago restaurant and calaret, served with a five-course dinner and with a musical revue and vaudeville and motion picture entertainment of more than two hours duration. Including members of the Association, 540 persons were entertained, the evening's event being included as an official part of the convention and entertainment program of the

convention and entertainment program of the National Association of Ice Cream Manufacturers.

Credit Information: The confidential interchange of credit experiences of which an imperfect beginning had been made a year ago, has been systematize?

and is now an important and appreciated part of

the Association's work.

Advance Market Information: The reporting of buyers in the market has been greatly extended. The Association staff obtains news of prespective buyers and this is supplemented by similar information submitted for their fellow members by members of the Salesmen's Club. Information from these different sources is transmitted to members of the Association

in a single bulletin issued weekly or semi-weekly.

Service Bulletins: The issuing of bulletins to members, with information on conditions in the ice cream industry and on general business conditions as they affect members, has been continued. Many sources of information are utilized and contact with many individuals is maintained to make these mimeographed and printed bulletins of value. Because of the greatly diversified character of businesses no attempt has been made to include in these bulletins anything re-lating to uniformity of standards in raw material purchasing, cost accounting, manufacturing or selling, etc., or to legislation affecting single types of businesses, etc., but other information of both directly applicable and thought-provoking character is earnestly watched for. Lists: The further compilation of a national list of

ice cream manufacturers has/been steadily carried forward. The collection of gallonage statistics will soon be systematically undertaken. The completion of a national list of ice cream manufacturers, even 90 per cent, accurate and complete, and of roughly accurate gallonage figures for each name on the list will constitute an industrial asset almost beyond

value.

Salesmen's Club: With its avowed purpose to "give advance information, protect against unscrupulous awance information, protect against unscrupulous competition, increase sales and raise the dignity of the industry," the Association of Ice Cream Supply Men's Salesmen's Club was formally organized during the summer of 1920. The Constitution regularly adopted declares eligible for membership "accredited salesmen and sales managers of firms members of good standing of the Association of Ice Cream Supply Men." No dues are charged all luminose of the sales with the control of the Cream Supply Men." Men." No dues are charged, all business of the Club being transacted through the Association headquarters and by the Association staff. Nine directors are elected by the membership, the directors in turn electing a President, Vice-President and Treasurer. An Executive Committee of the Club consists of its President, Vice-President and ex-officio the President of the Association.

Members of the Club interchange information. The Club also assumes a share in the work of the Association's entertainment, exhibitions, etc. Members of the Club receive from the Secretary's office a bulletin service corresponding to the mimeographed bulletin service given to members of the Association. Four hundred sixty salesmen are enrolled as mem-bers. Each is supplied with a gilt-enameled Salesmen's Club button, following in shape and color the Association Seal.

Fair Practices Code: In the spring of 1920 the President appointed Messrs. Harvey Miller, L. B. Ismon, B. B. Scott and K. W. Schantz, to serve with himself as a Fair Practices Committee, charged with drawing up and presenting to the Association a code

of business practices.

This Committee presented the Code first to the Board of Directors on September 19 and with the Board of Directors' endorsement, to the Association as a whole on September 20 at Atlantic City. The Code was read section by section and unanimously adopted. The Code lists forty practices declared unfair and is familiar to everyone present.

It would be possible to report at some length on this Code, its significance, its practical value to Association members, its endorsement and acceptance by the industry as a whole, and its relation to all business throughout the country. An address of the President delivered at the convention of the Association of Ice Cream Manufacturers of West Virginia in December comments on the Code from many of these angles, and the Secretary feels that he cannot do better in briefly supplementing this comment than to recommend that the Code itself be diligently studied by every member and by every salesman of a member.

Concerning the Code considerable unsolicited commendation has been received. The American Ship Service of Washington, D. C., considers that in the general interest of clean business it "should receive the widest possible publicity." The Unfair Competition Bureau of the Paint & Varnish Industries believes that the Association "is certainly to be tries believes that the Association "is certainly to be congratulated, and that the code of practices of this kind is worthy of publicity, and if it receives the publicity it is entitled to it will do much to crystalize public opinion against unfair methods of competi-tion." The Commercial Bribery & Tipping Review. tion." devoted to cleaner methods of business throughout the country, believes "that it is the most comprehensive code yet seen from a trade association.

Other Activities: Some months ago the Association was invited by the Chamber of Commerce of tion was invited by the Chamber of Commerce of the United States to apply for membership. Such application was made early in January, 1921, and was favorably acted upon ten days ago. Legislative activities have been entered into in an incidental way. Particular bills have been digested at the request of certain members, and correspondence with other trade associations has been kept up concerning different bills that have come before Congress or different state legislatures. The Association, at the request of certain other trade associations, has furnished members of the Judiciary Committee of the House of Representatives with copies of the Fair Practices Code and has endorsed for that committee proposed national legislation against commercial bribery.

The report of the treasurer, Thomas D. Cutler,

ummarized	the	3550	ciatio	n's	financial	condit	ion as:
ash in bank,	Equi	table	Trust	Co.			\$8,837.06
etty Cash Fr							4,511.20
iberty Bond							1,000.00
urniture and	Fix	ures.					2,257.62

\$16,705.88

The report listed the income from association activities since March 1, 1920, as \$30,653.14 and the total expenses for the same period as \$25,213.83. Nominees for the board of director, named by

a nominating committee appointed by the president, were unanimously elected for the ensuing year:

Thomas D. Cutler, THE ICE CREAM TRADE JOUR-NAL, New York.

G. W. Heisler, Menasha Printing & Carton Co., Menasha, Wis.

L. B. Ismon, Essex Gelatine Co., Boston, Mass.

O. S. Jordan, Brown & Shaw, New York, George H. Litz, the August Maag Co., Baltimore,

Harvey H. Miller, Miller Pasteurizing Machine Co., Canton, Ohio, Marshall Miller, Richmond Cedar Works, Rich-

mond. Va. Wyn B. Morris, Barker, Duff & Morris, Pitts-

burgh, Pa. J. H. Mulholland, 145 North 12th st., Philadelphia, Pa.

I. L. Nelson, C. Nelson Mfg, Co., St. Louis, Mo. S. E. Perkins, the J. O. Whitten Co., Winchester. Mass.

K. W. Schantz, K. W. Schantz, Inc., Buffalo, N. Y. B. B. Scott, 24 Ormsbee ave., Providence, R. I. J. H. Stoddard, Dominion Chemical Co., Syracuse, N. Y.

C. A. Street, Walker Vehicle Co., Chicago, Ill.
In accordance with the Association's Constitution,

In accordance with the Association's Constitution, this board of directors, meeting immediately after the adjournment of the annual meeting, elected the president, vice-president and treasurer

Lunch was served to representatives of member firms in the McAlpin Hotel, and following lunch a brief motion picture entertainment was given.

NEW LUBRICATING CUP

The latest invention for handling chassis lubrication is the Blooming cup made by the Bloom Flusher Co., Tiffin, Ohio. It gets its curious name from the inventor, E. J. Bloom of Tiffin, Ohio. The principle used in the cup, with some modifications, has been the basis of lubricators used on railway locomotives for a great number of years. The cup possesses an moving parts.

Three factors contribute to the action of the cup. First, the tendency of oil to spread. Second, the suction created in the bearing when properly filled with oil at the outset. Third, the vibration of the truck itself. As the two latter factors are paramount, no oil is fed when the vehicle is not in motion.

With the Blooming cup, as rapidly as the oil in the bearing is exhausted it is displaced by fresh oil drawn from the cup. In other words, there is always a film of oil between the wearing surfaces.

A particular advantage is the fact that an extremely light oil can be handled by it during the cold winter months. The control of the flow of oil in the Blooming cup is such that from 1000 to 2000 miles are insured at a filling.

After filling the oil to the brim of the cup, there being an outlet F through the top of the standpipe C, the oil will quickly seep to the level, D-D. The small amount which drains away gives the bearings a preliminary flushing. Then the cap should be replaced. No further lubrication takes place until the truck is started.

With the truck in motion a surging action is started in the oil which splashes and gathers on the inverted cone E on cap B. Oil splashed on the cone forms a drop at apex E of the cone. The apex of E is placed in such conjunction with the concave top of the standpipe C that each drop forms a seal over the hole F. The drop is held back by the vacuum in the cup until the capillary attraction through the flexing action of the bearing (creating a suction) causes it to be eventually dislodged to fubricate the bearing. This action continues while the truck is in motion.

When the oil level drops below the point D-D the top of the standpipe, the vacuum which displaces it further reduces the resistance offered to its splashing action. So, the lower the oil gets in the cup, the the resistance offered to its violent movement with but a depth of 1-16 in, left it will continue to lubricate the bearings.

TENNESSEE REORGANIZED

About thirty Tennessee ice cream manufacturers met at the Hotel Farragut, Knoxville, January 11, and reorganized the Tenessee Ice Cream Manufacturers' Association. The following officers were elected: President, F. O. Rettig, Chattanooga; vice-president, F. B. Stuart, Knoxville; secretary and treasurer, Geo. A. Decker, Nashville; directors, J. B. Neal, Morristown, Geo. K. Brown, Chattanooga, W. E. Drake, Nashville and O. W. Black, Memphis.

The prime motive of reorganization was to look after the mutual interests of the manufacturers, there having been introduced in both branches of the State Legislature bills to prohibit the sale of everything on Sunday. A legislative committee was appointed to go before the Judiciary Committee of both branches of the Legislature. Since the meeting these bills have been rejected by the Judiciary Committee of both branches.

After the meeting the members were guests of the Knoxville manufacturers at a banquee at the Business Men's Club which was followed by a theatre party.—GEO, A. DECKER, Sec.-Treas.

COST ACCOUNTANTS YEAR BOOK

The 1920 Year Book of the National Association of Cost Accountants, which has just been published is an attractive volume which ought to prove of real value to all men interested in cost work. In addition to the reports of the various officers and committees and a list of the members of the Association, it contains a complete report of all the papers delivered at the Annual Convention at Atlantic City, together with the discussions which followed each of these papers. This section contains a fund of practical cost information of a type which does not as a rule find its way into print. The Atlantic City Convention was probably the most important gathering of cost men which has been held in this country, and the opinions of the men who took part in this conference are worthy of some study.

The Year Book is distributed to all members of the Association. A few copies are available for general distribution to men interested in cost questions. The officers of the Association are in Rooms 2546-2548 Woolworth Building. 233 Broadway. New York City.

KEEPING GASOLINE CLEAN

A simple but effective device has been discovered to keep gasoline clean. Take a gallon can and make a false bottom. Perforate this with thirty-six 34-inch holes and support this with six 1-inch machine screws. Place this in the can and fill with gasoline. The dirt will then drop through the holes and leave the fluid clean. After about a week's use take out the false bottom, remove the layer of dirt from the bottom of the can and then it is ready for another filline.

Cities are increasing in population seven and a half times as fast as the rural districts, according to the Census Bureau.

CALIFORNIA ASSOCIATION AT OAKLAND

Southwestern Ice Cream Manufacturers Participate in Many Interesting Discussions At Sixth Annual Convention

The sixth annual convention of the California and Southwestern States Iee Cream Manufacturers' Association was held at the Hotel Oakland, Oakland, California, January 12 and 13, 1921. The first session was called to order at 10 a.m. on the twelfth by President S. A. W. Carver, of Los Angeles, who tresided

The minutes of the last convention, the financial report and secretary's report was read by the Secretary-Treasurer, Alfred Beaudry, Pasadena.

President Carver addressed the assembled manufacturers as follows:

Ladies and gentlemen of the California and South-western States Ice Cream Manufacturers' Association. The part of the forenoon's program that I dislike is now in order. While I enjoy the work of the association and enjoy meeting with you. It is always a little irksome to take the responsibility of an opening address.

It is very gratifying to see the attendance at the first session we have here this morning. Apparently very nearly a full attendance is present. It is also pleasant to see a few faces of our lady friends with us. We wish there were more. We know they are interested in the industry, some directly and others indirectly, and we always like to see them in attendance at our conventions and various gallier.

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the moustry which they are so merany patronzing. The ice cream industry is growing rapidly, and largely because the public is coming to a better understanding of the important position which it holds among the industries of any community. And it is gratifying to us to know that the members of this association are more and more awakening to this fact.

Up to a few years ago, ice cream was regarded as a mere incidental confection that did not occupy any very large place in the public mind, and was indulged in by society people and children as a conjection and of doubtful value.

This appreciation of ice cream as a food goes along with list recognition as an important branch of the dairy industry. Ice cream is also being given an amount of attention on the part of the public, and the government, and the agricultural colleges, and the state food departments, that it never enjoyed before. This, too, is of great value to the injury of the control of the properties of the properties of the properties of the dairy industry of our schools and food officials and agricultural colleges, the idea that, if ice cream is to be recognized as a food and as one of the important branches of the dairying industry, then it should be brought under very rigid regulatory supervision, in a way that has not always appeared to me practical and the properties of the dairy industry. The properties and must be deary industry, that if important branch of the dairy industry, that if

must at this early stage, without proper investigation, be brought under state supervision and regulation to the extent that is being talked in some circles?

We admit that it is a food. Indeed, we insist that is one of the important foods. It is not necessarily a confection, but it has its place on every bill of fare, or on any dinner table. But does this call for all the measures that are being proposed these days in the way of limitations and regulatory supervision and standards? Let me illustrate my meaning Candy is as much a food as ice cream. It is nearly Yet who would ever think of proposing all food a standard of weights for candy, a standard of food solids, as an essential basis for regulatory super-vision of candy? There are dozens of different kinds of candy, different formulas, different ingredients, giving different results, from any test that you may apply, whether it be only the food solids, the sugar content, the weight test, or any other. No two forms or kinds of candy would give the same results under tests. So it is with ice cream. There are many different kinds with different ingredients and formulas.

The ice cream industry is not disposed to thinch or to hesitate to do its full part, and it will go as far as there is occasion to go, in meeting all proper and reasonable requirements in the interest of fair dealing, or of public health or public welfare. We do not object to practical and fair standards that are not based on intried theories and which do not assume unknown conditions and unproven results, assume unknown conditions and unproven results, and it is not for that reason that we raise the objections we do to the movement in California to impose rigid and narrow and impracticable regulations and standards upon the ice cream industry.

We have studied the situation in every state and in every large city, and find no city or state that has attempted any such standard or regulatory measures as have been recently proposd in California. This has had a disquieting effect on the industry. We have in different states a simple food standard and nothing more. Both the Federal Government and the State Government, in cooperation with our cities, have fixed food standards. These food standards are fairly uniform. There are some differences of course. But for a number of years there has been a settling down and a standardizing of the industry in conformity with these requirements. And there is very little evidence of dissatisfaction, very little to be found that is objectionable. In no other state has there heen any attempt to formulate such weight standards. In the present condition of the in-dustry, it is too early to undertake to formulate other standards than those now in use. Until we know more of the subject than is yet known, it is not safe to attempt fixing additional standards.

We have not yet sufficiently investigated the subject. Our agricultural colleges, dairy schools and laboratories have not yet gone far enough nor completed a sufficient course of investigation to be able to say or to agree as to what ought to be the basis or essential features of such a standard. To act lastity and half prepared in fixing such a standard and enacting it into law would be a calamity. The result would be that when any other state should have its attention called to the subject, instead of making its own investigations, it would merely copy the first law that it found on the statute books of any State. This has been the history of industrial legislation for the last fifty years. You can follow it all the way through, if you will study that sort of legislation. The result would be to perpetuate

this ill-advised and impractical piece of legislation in many states.

We are not shirking the linelight. We are anxious that this matter be studied and worked out, and if there be need of further legislation in the public interest, we will go as far as anyone in the study of these problems, and as soon as we have sufficient knowledge upon which to predicate legislation then we will not object to any practical measure. Let us first know that we understand the subject thoroughly enough and are prepared to say what is best and what is wise and what will be the most practical method. Then when the first law is drafted, whether it be in California or in New York, it may become a good precedent and maye safely be copied or followed by any other state.

In an extensive correspondence with college men and from my attendance on the various national conventions, I find that a large number of the agricultural college professors and food authorities hold a similar view. They recognize that the time may come, probably is coming, when we should develop a more complete system of standards than we now have. But they all take the position that it is better to have no legislation than to have legislation that is too hasty and ill-advised. Such legislation is usually erratic and impractical, and is ten times as hard to repeal or to modify and correct as it was to enact. The attitude of the industry as a whole is that of caution—don't be too hasty. We are not fighting the idea of better standards; we are only seeking better information until we know we are on safe ground. I know that is the sentiment of the National Association, and of the different committees that have been making a study of these matters for some years, because I have participated in their deliberations, and we have discussed the subect many times.

Following along in the train of these comments, there have been some gratifying developments in the attitude of the ice cream industry toward the public and not only in the ice cream industry but in all branches of the dairy industry. Particularly is this noticeable in the Mith Dealer's Associations, which has characterized the purpose and work of the National Association, working in conjunction with the other branches of the dairy industry. While its primary purposes have always been to advance the interests and promote the welfare of the industry as a whole, yet more and more each year its memerical challing and the public, and have shown an interesting spirit of service.

During the past year, an effort has been made to give practical expression to these purposes and ideals in the form of a movement to establish a National Research Laboratory to be organized, Sational Research Laboratory to be organized, financed, equipped, and operated at Washington, or other appropriate city, by and under the auspices of the National Association, in cooperation with such other organized branches of the dairy industry as may be like-minded and willing to join in the undertaking. It has been very gratifying, during the past two years, in attending the National Convention of the ice cream association as well as of other branches of the industry, to observe the attitude and the disposition of representative concerns and men in the industry everywhere to take the lead, not to follow the work of others, but to take the lead in research work, in the dairy industry. That movement was started about two years ago. It was given a little more definite form a year ago. And then again, within the past two months, at the National Ice Cream and Milk Dealers' Association conventions, it was determined definitely to commit the industry to this work. A number of our colleges and endowed laboratories are doing dairy research work. But the industry feels that it wants to go still further and exemplify its interest in the public welfare by undertaking to do a work far more advanced than anything that is now being done anywhere. The industry itself is awakening to the fact that these matters are of immmensely greater importance to the industry than they can possibly be to a school board or to an association of physicians or to a college. The two great organizations, the National lee Cream Manufacturers' Association and the International Milk Ibealers' Association, are thoroughly committed to that work. The result will be, in the next few years, if the vision and judgment of these men who are representing these unational associations are to be depended upon, notable work will be done and notable things will be accompliated to the control of th

We all know that the thing that means the greatest good to us and the ice cream industry is exactly that thing which means the greatest good to the public. It is the public on whom we depend for our patronage, and if we are not broad-minded enough to realize that the only way to permanently enlarge and advance the interests of this industry is to do it along the line that means the greatest good to the public, and the greatest service we can render to the public, then we are very narrow minded and short-sighted in our understanding and appreciation of the industry that is in our charge.

I did not intend, ladies and gentlemen, to occupy more than a few minutes when I arose, but I see I am extending my remarks. I am led to one other practical application of the thought behind all this Not only is there developing a dosposition in the different branches of the dairy industry to undertake the work along the lines I have mentioned, but there is also developing a spirit of cooperation among those engaged in all branches of the industry. I think the war has had much to do with bringing the war has had much to do with bringing each other and to a better appreciation of the value of the adoption of cooperation in business. The war forced upon us the necessity of cooperation Having had it forced upon us by war conditions, we learned the value of it and the benefit of it and the lesson is staying with us.

In every line of industry that was made a necessity by war conditions, resulted in the lessons being so well learned that they are staying with us. and there is apparent in the industry today a very much larger spirit of cooperation than ever existed That is true not only among the different branches of the dairy industry, but within the ice cream industry itself. The ice cream people in most communities are working together better than they ever did before. That spirit of cooperation is everywhere. The man who does not wake up to that fact, and to the value of working together with the men in his own line of business in any community is not going to maintain his relative position in the industry very long. It is written on the wall as one of the things that is indispensable to the proper and largest development of the industry, that, instead of devoting a large portion of your energy to trying to tear each other down and try-ing to kill the other fellow off or trying to put something over on him, you should give your attention to your own business and to the things that mean the largest development and the best welfare of your own business. The old idea was that com-petition necessarily implied that every fellow had his knife out for his competitor and that half of your energy and resources will be devoted to tearing the other fellow down. Such ideas in business are now obsolete and the man who does not know it will not find himself in business very long in these days.

There is a little incident that I want to refer to in this connection. Among the other things that have been suggested to help make this convention interesting and profitable to all is an ice cream exhibit and scoring. Why not let us avail ourselves of everything we can get that a helpful to each other, that the little experiment we are trying here, the exhibit and scoring, and the opportunity to each of us to study the product of every other concern in the state, may be found to be of very great value to us. It certainly can be made such, if we will all take the kind of interest in it that we ought to, and it is only one of the evidences in this convention, of spirit of helping each other and thus ledging curselves. We should always remember that, as we develop the industry, we develop our nown business.

I want to say a word in regard to the different associations, the national and the state associations and the district associations, I find, in looking over our membership roll this morning, that we have included in the membership of the California Association eighteen members who are also members sociation eignicen memoers who are also memoers of the National Association. There are seventeen members of the California Association who are not members of the National Association. There are four members of the National Association in California that are not members of our California Association. I mention those figures so that you can get some idea of the work we are doing locally and nationally. It is gratifying to me to see as many as eighteen out of thirty-five members of our California Association are also members of the National Association. I am pleased to say that while in previous years we have not had that many, we have been increasing the number each year. I want to say this; the time has come, gentlemen, when any man who is pretending to be in the business in any worthwhile way cannot afford to neglect identifying himself with the National Association. Suppose you take the position, "I am not concerned in the various civic organizations in the community in which I live. It costs \$2.50 a month." or whatever it may be "and they are of no consequence. I will let them go by and save that \$2.50 a month." It is just as good business sense to take that attitude with regard to the activities of the community in which you live as it is to say, "Oh, well, I am able to run my own business. What do I care what the National Association is doing?" Gentlemen, the thing that has accounted for more of the rapid development of our industry and put our business on a more satisfactory basis during the last few years than any other, has been the leadership of the National Association. And no man can afford to continue in the ice cream business who does not identify himself with the National Association, as well as with his own local organiza-1 hope to see every member of the California and Southwestern Association a member, before another year, of the National Association. And, turning it the other way, above all I want to see every man join this association who is a member of the National Association, but who has not taken enough interest in local conditions of his home state to become a member of the California Association.

I shall not take the time to mention things that occur to me of very great importance that call for the consideration of this convention. These times are poculiar. They are times when changes are rapid. A period following a war necessarily brings with it problems and conditions that must be met. We have got to face and be prepared for them. Some of those things are going to be given consideration during this convention. At no time in the history of business, in my judgment, have there been so many vital and important business questions presenting themselves.

One of them that is extremely important, is the practicable means, the wise course to pursue, in the inevitable readjustment of our prices and costs. That readjustment is just as inevitable as that the sun will rise tomorrow morning. It may be handled wisely or it may be handled unwisely. We are facing some things that are going to call for statesmanship in business, that is, broad-minded study and wise control of the course that is, broad-minded study and wise control of the course that is, broad-minded study and wise control of the course that will be wisest, and best and that will satisfy the public and leave with them the feeling that we are not slow to recognize our duty to them. And if we do that, I am sure we will receive an appreciative recognition in return.

After a few announcements the meeting was adjourned,

The afternoon session was called to order at two by the President who appointed the following committees:

Auditing Committee: Messrs. Hightower, Calkins and Contreras

Standards Committee: A standing committee on duty throughout the year: Messrs. Dryden, Chairman; Breyer, Turnbow, Wilson and Goode.

Nominating Committee: Messrs Hage, Alfred Miller, Vahlberg and Platt.

Committee on Place of Next Convention: Messrs. Chapman, Ranney, Peterson, Grace and Mott.

H. E. Peterson, Sacramento, opened the formal program with a paper entitled, "Should There Be an Additional Charge for Re-Icing," which was followed by a short discussion on the subject.

"Should the Delivery of Small Packers to Retail Customers or Special Flavors of Ice Cream to the Wholesale Trade Be Discontinued," was the subject of an address by F. E. Miller, Oakland. A discussion followed.

The chairman called on Robert J. Dryden, Oakland, who spoke on the subject, "New Ideas and Practices in the Ice Cream Industry," Mr. Dryden's address was followed by a discussion on the points he brought out in his talk.

W. T. Vahlberg, Oakland, read a paper entitled, "Value of Brick lee Cream as a Trade Builder," which was followed by a discussion of the merits and demerits of selling ice cream in package form.

The chairman appointed a committee on abuses in the service as follows: Messrs. (A. L.) Carver, Alfred, Dryden, Vahlberg and Peacock.

The question of a weight standard for ice cream was discussed as follows:

The Chairman: Mr. Dryden has just brought the information to me that in a conversation over the telephone this afternoon with the Sealer of Weights and Measures, Mr. Johnson, at Sacramento, Mr. Johnson explained that the ice cream people should prepare themselves for a bill to be introduced before this present legislature, fixing a weight standard of ice cream. Mr. Dryden, in a very friendly way, tendered the co-operation and assistance of the standing committee of this Association for the last year, that is ready to make its report, to Mr. Johnson was invited to be present, if so, and Mr. Johnson was invited to be present, if and the committee of the standing committee of the standing

co-operate with him in any way upon this subject at any time, and he expressed a desire, if I am correct, to receive a copy of the report when the report of the committee was ready. Is that about a correct statement, Mr. Dryden?

Mr. Dryden: He said that he would hold his final decision until he heard from the committee to have a personal discussion of the matter with

The Chairman: I have been a good deal concerned or interested for some time past to know if the whole movement toward a standard had any explanation as to whether it was inspired or suggested by any pressure or any demand or any request, that is, if the subject had been brought to the attention of the state officials by any active interest of which we are not informed. It has been a puzzle to me to know why there seemed to be a feeling anywhere that there was need of something of this kind, and if so, from what source that request or pressure may have reached the office of the State Sealer of Weights and Measures. I have not been able to learn that there has been any such, and yet I had been told sometime ago that either one or the other of the state officials had made the statement that the only reason why they began to look into the question was that complaint had been reaching them from certain persons in the State interested in the ice cream business, urging that they take cognizance of it and make an investigation and institute some measures that would accomplish some form of standardization. It seems to me that if anybody among us is aware of any activity of that kind, it would be of great interest to all of us, and would be a proper matter to consider here.

Mrs. Babcock: We found something like that back in the State of Minnesota, and we went right to the Weights and Measures, and put it right up to the Scaler and showed him where such a thing could not be taken care of. But I understand that one of our United States Senators from North Dakota is very much in favor of ice cream being sold by weight, and he has passed the remark that he will make the ice cream men come to him. I don't know whether this has been brought about, or whether some of the states in general have gotten hold of it, or what. But I think it would be wise for your committee to see your Weights and Measures man before this bill goes in.

The Chairman: The statement I got this afternoon was that the subject of a standard of weight in ice cream had not been considered by any legislature in any State in the Union. There are no stat-utes in any State in the Union on that, or any the subject, except the ordinary standards of milk as we have them in the general dairy laws. That statement was based on information in a per-sonal letter from Professor Washburn recently. He has been investigating, and in making the statement nas been investigating, and in making the Statement I did, I was giving the information as Professor Washburn gave it to me. I assumed it was correct. And it would seem that if California or any of the officials of California were determined to take the question up and to force some action on it, it would be in the way of pioneering, and it seemed to me and it seemed to Professor Washburn also, and to a great many others who had made a study of it, that it would be taking action entirely too hastily, before we know enough on the subject, to intelligently draft a legislative measure. For that reason, it has always seemed to me that the proper course would be to advise thorough investigation, more study on the subect, and delay in attempting to rush into legislation, until we know more upon the subject than we do now.

Mr. Seba: I have come in contact with Mr. Johnson in Sacramento quite often, and the question has come up of ice cream, as to where this agitation started. The thing that is at the bottom of the whole matter is the retailer. During the past season, there have been some retailers that are bound and determined to give as little weight of ice cream as it is possible. Take a hard cream, and they would scrape it and have absolutely no consideration for the size of the air spaces in the carton. And the public got disgusted with it and took it up with our county officials there in Sacramento, and they in turn took it up with Mr. Johnson, and Mr. Johnson got in contact with some of these people that were doing that, and they in turn laid it onto the manufacturer, that he was getting too much for the ice cream, and if it swelled as much as some of them said it was swelling, it was absolutely impossible to give any weight or amount in the carton. That is what led Mr. Johnson to believe the manufacturer responsible. Whereas, if we could turn out ice cream weighing five or six pounds to the gallon, the retailer can get about the proportionate weight in, and that is really where the agitation started—with the public and with the retailer being

very anxious to make a profit.

Mr. Goode: Mr. President, I believe I would like Mr. Goode: Mr. President, I believe I would like to see a legislative committee appointed to take care of that thing and get some action on it. I think it would be a very good idea. If the Committee on Standards are to do that, I think it should be designated so we will know what our duties are. The Chairman Mr. Goode, that was really my form the committee of t

on, with the Legislature here in session, should have as its proper duty just that thing. They have made a study this past year, and are in a position to be the best posted on the subject.

The meeting was adjourned.

Thursday morning's session was called to order by President Carver, who made a few announcements which was followed by an address entitled, "Advertising Ice Cream," by K. L. Carver, Los Angeles. A discussion regarding the ways ice cream can be brought before the public followed.

"The Work of the State Dairy Council," was the subject of a talk by S. M. Green, of the California Dairy Council. Mr. Green reviewed the work of the Council and showed how it aided the advancement of dairying in the state. It was moved and seconded and duly carried that the Association support the work of the Council through its Board of Directors, giving the latter authority to act on their judgment as ot what would be appropriate.

Alfred Beaudry, Pasadena, spoke on the subject. "How Should Price Readjustments Be Handled."

After a discussion of the present price problem, a committee was appointed to consider the matter of pricer egulation to report to the ocnvention at the afternon session. Thec ommittee consisted of Mr. Platt as chairman and Messrs. Hage Vahlberg, Hosking and (K. L.) Carver.

The meeting was adjourned.

George E. Platt, Los Angeles, opened the Thursday afternoon session with an address entitled, "Uniform Cost Accounting." Mr. Platt's talk was fol-lowed by a discussion of the merits of the uniform cost accounting adopted by the National Associa-

"The Good of the Industry" was the subject of a talk by W. B. Hage, San Diego, which was followed by a short discussion.

The chairman called on E. J. Lea. of the Food Department of the State of California, who talked regarding the work of his department.

C. F. Hoyt, of the California Department of Agriculture, at the request of the Chairman, gave a short

"Are Uniform Standards of Quality in Ice Cream Practicable, and If So on What Should They Be Pased," was the subject of an address by Prof. F. E. Turnbow, of the State Dairy School.

The meeting was then adjourned into the annual business meeting of the Association and after the reports of the various committees were acted upon the following Board of Directors were elected: S. A. W. Carver, Los Angeles; M. J. Alfred, L. J. Christopher and George E. Platt of Los Angeles; F. H. Ames, San Francisco; R. J. Dryden, Oakland; W. B. Hage, San Diego; H. R. Peacork, Bakers-field, L. W. Wilson, Fresno; I. J. Trainer, Sacramento, and J. M. Contreras, Phoenix, Ariz.

The Board of Directors re-elected S. A. W. Carver, president and elected Robert J. Dryden, as secretary-

treasurer and Jay Kugler, San Francisco, as fieldsecretary.

An ice cream scoring contest was held in conjunction with the Convention. Each firm competing sent to the convention a five-gallon container of vanilla ice cream taken from its regular stock and without any marks of identification. Fourteen California firms participated in the contest.

The icc cream was scored according to the following standards: flavor and palatability, 50 per cent.; texture and hody, 20 per cent.; appearance. 10 per cent.; package, 5 per cent.; butterfat, 5 per cent.; total solids, 10 per cent. The scoring was conducted at the laboratories of the University of California. The judges were Prof. C. L. Roadhonse and Prof. F. E. Turnbow of the dairy division. The scorers kept their findings confidential and though each contestant was informed of his score, the decisions of the judges were not made public.

Addresses Delivered At The Convention®

Should There Be An Additional Charge for Re-icing, by H. E. Peterson, Grand Royal Ice Cream Co., Sacramento.

It is with a great deal of satisfaction to me to find the ice cream men getting interested in the "iced up" problem as there is not a question in my mind that is as vital a problem to the industry.

In the early stages of the business "iced up" was a small item, when we only put out one flavor and that went out in the packing tub, which was set in behind the counter and sold from the tub, and in warm weather it was sold out or one half the ice brought back. The dealer iced his own coils and furnished all the ice used around the fountain, buying the ice from the ice man.

Then came the cabinet and the ice cream man iced that up but he did not ice anything else; next came flavors, at first about three or four and the manufacturer started to ice the fountain free; then came more flavors and the dealer asked for free ice (cracked) for his drinks until at the present time we are icing everything in the store and our men are asked to clear a whole lot of stuff off the fountain and wipe it all up nicely and put everything back after he is through, and be very careful not to spill any water on the floor or mop that up as well.

The beer man delivers his beer, he does not furnish any free ice. The soda water man does not think it necessary to give away a lot of ice every time he sells a case of soda-water, and furthermore tells the trade, "You huy my soda water and the ice cream man will give you all the ice you want to cool it." The root-beer man comes along and sells some root-beer and tells the dealer, "You must have this good and cold before you sell it, the ice cream man will give you all the ice you want." Then comes orangeade, kennoade and a dozen or

more drinks since the country went dry, but none of them furnish any ice. They refer the dealer to the ice cream man for free ice.

In Sacramento we had an ice charge in effect for about one year of ten cents per bucket of ice and salt containing thirty-five pounds, which we found very effective, and I believe we made a very big mistake when we took it off; we not only received pay for one-third of our ice cost but we also found it only took about 75 per cent. of the ice on our routes it takes when the ice is furnished free, so besides saving in ice and salt, there is also a saving in labor.

There are two ways of charging for ice, one is by the bucket and the other so much per week. Which is the better way, I am not prepared to say as I have only tried the one way, but I do know there is something wrong with the ice cream men's heads when they will pay out their money for ice and salt and take it out and give it away to cool everything the dealer thinks he would like to have cooled, and I know positively there are a number of them that only handle ice cream in order to get free ice for their soda coils and soft drinks. As long as the ice cream men are foolish enough to furnish free ice, the dealer is going to take advantage of the privilege and the soft drink manufacturer can sit back and laugh.

There seems to be an impression among some of the ice creain men that the charge for ice would not be lived up to, that it would give some of them too much of a chance to use free ice as a means to get trade.

In Sacramento we did not find that the case and I believe there is more honor among the iee cream men of California and they have too much money invested in the industry to stoop to those petty tactics. The time has come now when they have got to work open and above board: if they do not they are going to find it hard to pay interest on their investments.

^{*}Space limitations prevent our publishing in this issue all of the addresses delivered. Those held over will be published in early issues—EDITOR.

Our books show that during the period of time we had the ice charge in effect in Sacramento, our ice cost 7 cents and salt 3 cents, or 10 cents for each gallon of ice cream sold and our sales to the transhas shown a return on each gallon of 2½ cents for ice and 1 cent per gallon for salt, or 3½ cents per gallons on each and every gallon sold.

Now if the charge of 10 cents per bucket for ice was put in effect universally over the State and the cabinet service charge of \$1.50 and \$2.00 per week and where the customer uses less than 7 gallons per week was discontinued, the charge for ice would have a tendency to regulate the dealers' business because when he gets down under 7 gallons per week his ice cost gets too much for him and in most cases they will stop handling it until such time as weather conditions will allow him to sell more, which I believe is the obect of the cabinet service charge.

Now, I will ask that this be brought to a vote at some time later during this meeting.

DISCUSSION

The President: Gentlemen, you have heard this very interesting paper on a very practical subject. It is now open for discussion. We would be glad to hear from any of you upon the subject.

Mr. Hage: Mr. Chairman, while I was East on this last trip, I heard of a good way to stop it. In Detroit, they notified the drivers to positively stop giving free ice for the fountains, for their gooseneeks. They made up their minds the drivers were made. They made up their minds the drivers were drivers, they put a little salt in the ice one morning, and in three hours they knew who was getting free ice, as pretty nearly every soda fountain got them on the wire. For ourselves, we only allow them to put in the ice which ices the ice cream, and we have been able to hold them to it. They have to buy their own ice for everything except the ice cream.

The President: 1 want to contribute one word or two on the subject of the paper. It is my belief that much the larger portion of the fault that grows out of the abuse of free icing is the fault of the local competition in which you find yourselves in any city. It is the fault of competitive conditions right at your own plant, and your relations with your neighbor largely that such abuses result. If you will turn the light of introspection into your own the condition of the present of the present of the present of the present your are maintaining in your working relations with the fellow in competition with you, I think you will find a large portion, if not the major part, of the fault.

But that won't cure it all. There is an evil there in spite of everything you can do. And one of ways of minimizing that evil is to sit down and get your feet under the same table with the other fellow who is running you a competitive game, and see who will go the farthest in winning the good will and the patronage of a lot of voracious ice cream customers, and if each of you allow the other one to work him, you will soon find you have worked yourselves pretty nearly out of business along that line. That is one of the things I had in mind and referred to in my talk this morning is the spirit of cooperation of the ice cream industry the same as now permeates every other inindustry? Don't overlook that important feature of the abuse of this re-icing question.

Should the Delivery of Small Packers to Retail Customers or Special Flavors of Ice Cream to the Wholesale Trade Be Discontinued, by F. E. Miller, of the Miller Ice Cream Co., Oakland.

You will notice that the subject assigned to me naturally divides itself into two subjects, that is to say, first, should the delivery of small packers to retail customers be discontinued? and, secondly, should the delivery of special flavors of ice cream to the wholesale trade be discontinued? There are two separate branches to the subject.

It is not for me to come here and solve this problem and tell you that you should not deliver quarts or small packers to your particular trade, because conditions in your locality might differ from the conditions in the locality of somebody else. Nevertheless, this is a subject worthy of the closest attention, because I am frank to tell you that, often going into the subject as exhaustively as I can from a cost accounting basis, it is not profitable business to deliver small packers to family trade. Yet we are doing it, and I dare say if we analyze it carefully and go to card cost accounting, some of us will find that this is a distinctly unprofitable feature. At the same time, we should consider the question pro and con. The conditions in Riverside or Redlands or Santa Ana or Los Angeles, Sacramento, and other places, might differ from the conditions prevailing here in Oakland, and I should like to hear from others as to those conditions

It is very hard for most of us to give a card cost of delivering a quart of ice cream. We have set a price of \$1.25 for a quart delivered to the home. We want to charge the limit. But it is the wrong principle for any of us to enter into competition with our retailers, that is, with our dealers. We should really, as wholesalers, try to advance our product and sell it through our agencies in particular localities. And while we advertise. "Go to your dealer and get the ice cream, but if he hasn't it, ring up Blank's telephone number," because we do have a certain duty to perform to the public, and one of our duties which we have as representatives of the ice cream industry is to encourage the sale of the product we manufacture. And it may be that Mrs. Jones, when she is going to give a party for the evening, does not find it convenient to go down to the drug store or the corner grocery to get her dessert for that evening, but we want her to serve ice cream, nevertheless, and so we deliver it to her, but we place a charge of \$1.25 a quart for that delivery. I am frank to tell you, however, that that does not cover the cost. As you know, the material cost is very much less than the delivery cost. It is impossible for us to tell accurately what it costs us to deliver a small packer of ice cream. But as near as it may be figured, it costs us at least forty cents to deliver a packer, and it costs us at least fifty cents to pick up the empty container. One reason for this cost is that when you deliver a family order, it often requires another trip to pick up the container, and you know the disadvantages of that-sometimes the family is not at home when you go back for the container, and there is a very great loss on those containers, particularly

in apartment houses. Some of them even think the container should be given to them, at least I have found mine out in homes where they had used them for flower pots and hen's nests.

So we have to realize that there is this loss in delivering those small orders. Of course, there is an advertising element there, and to popularize our product we may charge this loss to advertising, and in that way have some excuse for continuing to deliver the small order. But if there is anyone here who finds it possible to handle that business without loss, I wish you would advise us, and perhaps tell us how you can make such deliveries profitably, even when you charge a very high price.

Then there is the fancy trade that cannot very well be supplied from the local dealers. We like to encourage the local dealers by giving them a commission out of the orders thay turn in. We furnish a schedule price, and I have sent for some of those price cards, showing our prices, and I believe other manufacturers use about the same price. But we do not find it profitable. We put up fancy moulds and puddings and things like that, for which there is a demand, but in no sense can it be said to be profitable.

Now, the second feature of this discussion concerns the question of the special flavors that we serve our wholesale customers. I would rather take this stand on the matter of special flavors-I would rather encourage it from the standpoint of popularizing it and encouraging people to eat more ice cream, because that, after all, is one of the functions of our business. I remember the different conventions I have gone to the last eight or ten years-I never miss a convention, you know, I am a front-seater. and believe in it, and believe we should spend most of our time in conventions in talking about how to make our ice cream better and to raise the standard, which I think cannot be said to be other than perfectly proper, because, if we succeed in our business, we must have the highest standard for the quality of our product, and the highest standard for the service and everything with it. But we don't get right down and spend as much time as we should on educating the dealer and taking the public into our confidence and getting them enthused over our products. We believe in it because we believe in the ice cream industry with all our hearts. I personally believe that ice cream is the most wonderful dessert we have, and, as we will hear later on about it, while it is a luxury and a confection and delightful, yet it is a food, and we should emphasie those elements, at least we should encourage the sale of ice cream in every way that we can.

I bink, though, that all of us believe in the old standbye, vanilla, strawberry, and chocolate, and the two water ices, pineapple and orange. But it is a fact that if we tried to restrict the sale to those varieties, when we get together, we shall make a mistake. While it is more profitable just to have those flavors, because they cost a little less and we do not have to keep so many on hand, yet, gentlemen, you are overlooking a good bet if you do not put out some special flavors from time to time, just

for the purpose of encouraging the sale of ice cream. It will cost money to do that, but I think you are sowing and you will reap quite a gain in getting people to eat ice cream. I don't know just how many gallons are used in the State of Caliafornia, but at anyrate, they certainly have not yet reached the saturation point in ice cream consumption, and there isn't a plant around here running to full capacity, certainly not at this time of the year. And, instead of spending 75 per cent, of our time talking about how to make ice cream better and 25 per cent. in talking about how to sell it, if we, now that our plants have got upto that efficiency point that we know they have reached, should spend 75 per cent. of our time on how to get people to eat more ice cream, it would be profitable to us. Because, after all, there is too great a disparity between our productive capacity and the capacity for consumption of the public.

I will say this, that we have a gratifying increase in business here locally. But, so far as I am able to understand, the reason why that increase came to us was because we centered our fire on increasing the sale of our product-it was not so much to get more dealers to sell, but to get dealers to sell more ice cream. And in studying the problem of the individual dealers, we know that we have lots of dealers that were not properly sold in the first place, because we are missing an opportunity when we get the order for the cabinet to go to a dealer that we do not enthuse him over our product, not so much about Blank's ice cream as about ice cream in general. The dealer ought to be correctly sold, he ought to be enthused and made to feel that ice cream is a wonderful thing for him to sell, and that it is more profitable than many other lines he has in his store, because, when the youngster comes in, he can buy jelly beans, he can buy candy and buy knickknacks and pastry and all that kind of thing, and what we would like to do is to have that dealer enthused to the point that he will feel that ice cream is the most wholesome thing of them all, and in that way he will sell more. And children and the women folks, and they make up largely our consumers, we ought to cater to them and their wishes. They are all used to vanilla and strawberry and chocolate, and of course it is desirable that they should continue used to these flavors, but I would have a little different flavor from time to time, and do it up in a different way. In the past I have not favored the small package, the small brick idea, and I am not talking now for our paper box men who sell us boxes-when they first came here I was one who said the box was quite a nusiance, but I have really been converted to it, because I see my competitor, and I am giving all honor to him, he was the first that got that up and put a big picture on the billboards in several places until I think it is recognized in some places now that he is the only man who has it, and he gained considerable by that, and whatever honor is due him I accord him. It may cost money, and there may not be the return to pay for the outlay, but it will certainly give us return in popularizing this product and enabling you to sell more ice cream. I know of other

instances, where that is done, too. I know of one enterprising dealer who, instead of giving a straight vanilla, chocolate, or strawberry ice cream, takes a little of each and puts it together and calls it "XXX" ice cream. He was an enterprising dealer, and in that way he got the fancy of the people and he made quite a hit in selling the three old kinds by just putting them together in the way indicated and calling it "XXX ice cream." I don't suggest that to you except to draw attention to the fact that it makes money for us, because if you are different and have a different way of doing things, you will be distinguished from your competitor.

I think we ought to pay particular attention to our dealer and make sure that he is handling our product in the right way. Some of us, you know, sell not only to confectionery stores but to groceries and others that perhaps do not keep their scoops clean. I have heard it stated in regard to a certain brand of ice cream that people don't like to get it from that store, and the fact is that the manufacturer is the one that gets the discredit if the scoop is kept in water that is apt to get tainted, or something of that kind, which shows itself in the ice cream. And perhaps you can't blame the consumer for saying, in such a case, "Blank's ice cream is no good,"

So I say there is a great deal in properly educating your dealer and confectioner properly and enthusing him over it, letting him know that some of the troubles we have to undergo and also that the wholesale route man is hired for all day nine hours, and we have to pay him \$6,50 a day, independent of the size of the contract, and he will know that we cannot always deliver to him in the morning, since the driver has to hired for all day, and he is given the route and he has to take his ice cream when the route man gets there. It will avoid a great deal of trouble if your dealer is taken into your confidence on that.

DISCUSSION

The President: We have had an excellent talk by Mr. Miller. I know you will all agree it has been very interesting. The matter is before you now and I want to see a free discussion of the subject.

W. H. Hosking: Mr. Chairman, I would like to see the delivery of one-gallon packers to the country cut out-that is where we are losing our money. So far as the city trade is concerned, we like the city trade in the matter of small packers, but all of that business is a losing business in the country trade.

J. H. Seha: Do any of you know how much it costs to pick up an empty tub? It costs at least 25 cents. We have to remember that it takes a man's time, and as Mr. Miller says, he is paid \$6.50 a day, and it takes at least an appreciable part of an hour to pick up a tub. The loss of containers that has been mentioned is a serious matter, as it seems to me, and in considering that, we have made an effort to handle wax fibre containers, and have not found it successful, for the reason that the wax will crack and the fluid will get into the container, and that we have to replace the ice cream. I took the matter up with the American Can Company in San Francisco, and they are now making us a very light tin can, like the ordinary coffee can or baking powder can that you find on the market, and they make up a metallic fiber board container, wax on both sides, and we can put out a container now that, if we send it out about the time it is wanted, we have no charge for picking up, we don't care whether we

lose the container or not, and the fact of the matter is, it is cheaper to lose it than to go back and get And in that way we feel that we are going to keep certain retail business, for the reason that oftentimes the people want their goods directly from the plant, and also for the further reason that the local dealer is not always in a position to supply the article in satisfactory condition. I think that matter is one well worthy of consideration.

Mr. Miller: How much does that container cost complete

Mr. Seba: The half gallon size costs twenty cents, and the gallon size somewhat less than twenty-four

cents.
A. S. Goode: For the purpose of solving the problem of retail service in one gallon of ice cream or less lots, we found in our plant that it was wisc to employ a man running a small business to put on a service and keep up the cost of service in that town. We have about 20,000 people there, and we find that, in the course of the summer, by keeping close track on the cost, that we lose about \$80 a month on the service, charging a 75 cent increase over the average wholesale selling price of ice cream. In addition to that, with all the care that we could use, we lost forty per cent, of the tubs and containers that we sent out. This man of whom I speak made a specialty, and he did not have anything to do with the plant, other than to take care of the retail trade of the town and keep close track of the cost of his service and of the time spent and the loss in tubs-and that loss was placed at a minimum, as nearly as could be figured, and for the entire year the loss on the tubs was about as I have stated, and the loss per month in the summer and the best month was right around \$80 a month, based on those We have therefore discouraged, as nearly figures. as possible, any service of that kind, and if anybody now gets a container of ice cream from our plant, we require a deposit to be made on the tub, and in that way we have gotten back quite a lot of those tubs that go out, and as for the rest, we figure that we might just as well call it a loss.

The President: Do you keep a record, so that you can check back and know definitely that you do or

do not get the tub back?

Mr. Goode: Oh, yes, now we do that. But the cost of going after it two or three times was too much.

The President: Do you not often find it the case that when you go after them, the tubs are not there, and does that not make up a part of that cost?

Mr. Goode: Yes. For instance, the ice cream would be sent to one address, and maybe was taken on a picnic, or it went to a neighbor's house, or the person who ordered did not order for himself-there are

many reasons for that.

T. E. Chapman: We had this up, Mr. Christopher and I, and I think so far we have been getting some good pointers here this morning. We were a little doubtful ourselves in Los Angeles whether we were getting enough for a quart of ice cream, and it has been our thought that when it comes to a price readjustment, this matter can be considered. We find that Mr. Miller gets \$1.25 a quart on small packers, and in Los Angeles we have been getting only 90 cents, and we are surely losing money on it. It seems to me it is pretty nearly impossible to discontinue the practice of delivering a quart of ice cream when it is called for, because many times they call for something that the dealer does not have, and it is only a small order and does not pay him to order a large container for one small order. If we are charging 90 cents now and can't charge \$1.25, then perhaps we can practically eliminate loss by using the plan that Mr. Sela mentioned, since we would be eaving both on the delivery and on the pick-up. There is no question whatever that there is no money in it at 90 cents—it can't be done. And then another thing: by charging \$1.25, we think that the customer will practically go to the dealer, the drug store or contectionery store, in the majority of cases, because he can get it there for so much less—down at 65 or 70 cents, instead of \$1.25, and in the great majority of instances I believe the public will walk a block and get the ice cream. Practically, when they order directly from us that way, they are spending some-

thing for nothing.

Mrs. A. 11. Vander Bie Babcock, St. Paul, Minn.: I cannot understand how you people here manage to have so many different flavors. I have been in stores here in California and find five or six different We may be a little old fashioned up in Minnesota, but three is all that we will pack in any Minnesola, but three is at that we will pack in any store. We make one brick every Sunday for a special, and in that we give them Neapolitan in addition to the other flavors. But those lines of bricks are all that we will carry in stock for our trade, and we are not bothered with carrying all these other flavors. As to water ices, we have never put a water ice in any store. If they want water ices, they must call at the plant. We deliver to families, but as to serving of water ices in cartons, it has never been done in our city, and I don't see why any competitor should have to start and carry two or three water ices or any drug store or any confectioner. You are just cutting down yourself and making more work for yourself, and the dealer doesn't care-it doesn't cost him anything. more cream you put into his place, the more cabinet room you give him, the more cabinets you give him, he will do just so much anyway and no more. I have been in stores here where I have observed that you have two or three three-hole cabinets. And it is enough to break up any ice cream manufacturer to have three-hole cabinets in a store that is not to have three three-note cannets in a store that is not selling proportionately—and throw the ice in with it. I have one large store in the city there that sells fifty gallons of ice cream a day. He gets one five-gallon package of chocolate, two fives of strawberry, and the rest is vanilla. He has a packing box in the basement and one three-hole cabinet upstairs. If I had put in all the cabinets that you gentlemen are buying out here in California, I should have had to quit the ice cream business long ago.

Guit the ice cream business long ago.

F. E. Miller: I think Mrs. Babcock has really given us something to think about there. And isn't it a fact that we deserve that criticism, because sometimes these little stores actually have a hundred dollars worth of cabinets, and my criticism is not so much that we put in so many flavors, but that we have so many at one time. In other words, if they would eliminate the chocolate on one day and put in five gallons of a different flavor, it might help on that day, because I might say to Mrs. Babcock and to some of you who do not know that it has only been within the last year that we have ever been able to get them to take a five, that is, in this part of California. And

even now in SanFrancisco, the two-gallon is as much as they can get away with.

Mrs. Babcock: We were surprised to see so many small packages, and especially noted in some of the plants where they put three gallons in a five-gallon

F. E. Miller: That is another bad practice. because we want to make these meetings helpful, right there is where some of you can make a resolve that you will carry home an idea that will save you some money. And that is what we come to these conventions for. And one way to increase the sale of small orders of ice cream is with the brick—to enconrage the dealer to sell bricks. As you know, our bricks will keep an hour, we say, and sometimes they keep longer. We know of some customers who really develop quite a sale by making delivery to the really develop quite a sale by making derivery to the home about the time they are going to serve their dessert, with a bicycle or something of that kind, getting boys to do that. That encourages the sale. We have one drug store that sells, I don't know just how much right now, but it is considerable, one of

our best customers, and it is on account of his being able to make those deliveries at 65 or 70 cents a quart, when we ourselves could not afford to make the delivery, because we have an expensive man and a machine. There may be someone else yet to speak

on the individual containers here.

Mrs. Babcock: I think I can explain that. The reason they put three gallons in a five-gallon can was, when they went to the customer, if he had a fivegallon container there that was, say, a quarter full, they would take and put that into the five-gallon can, and that would break in.

The President: Take the case of nine compart-ments, three cabinets of three holes each. That has been stated to be the practice with some customers.

Is that necessary any where?

Mr. Hosking: That calls for the use of a lot of extra ice. And on the ice question, in Sacramento we put a charge of ten cents a bucket for ice. We didn't put in the amount of cabinets, we eliminated there, but when we put the ice charge on, they ridiculed us so much about it that we took it off, rather fearing that we could not get cabinets in their places. If we had kept the ice charge on, we would have been all right in respect of the cabinets-it would

nave reen an right in respect to the carrier regulate itself.

Mr. W. B. Hage: Mr. Chairman, I am a two-in-three and a three-in-five man. We have this situation in San Diego, and we have it this year. In the winter time, when trade is running light, the cabinet wagons will take out a few twos and fives, and he goes to a customer and he finds that he has got a gallon left in one of the containers, and he will just ship that gallon into a three or a five, for instance, and that saves a can. That is the way we are handing that. Coming back to the matter of bricks and the brick cabinet, we have been experimenting the last three or four years with that on one route. My son, who has charge of that, got an idea in his head, and that was to just make a switch every week, and we have increased our business fifty per cent, on that route. We put out a special brick, and that brick has route. We put out a special brick, and that brick has to stay until next Saturday. The drivers at first trade into it. We would put out pistachio and two other kinds of brick, and then come hack to Neopolitan, and then switch right away the next week. But I don't want you to get the idea that we are packing three or four moulds—we have just one brick mould, and we give them a different brick

L. W. Wilson: In order that this matter of having too many cabinets in a store can be brought to some conclusion here, I would suggest that a committee be appointed to formulate a plan of charging so much per hole, with an idea of getting the entire Association, including the Southwestern States, to adopt a plan of charging so much per hole, making it uniform. In that way, if you have a large cus-tomer, handling fifteen or twenty of gallons of ice cream a day, he would not object—it would be nothing to him. On the other hand, if we had a customer only handling one gallon a day, he should pay a cabinet charge, and it would help out in the ice you would have to use on your customer and ice you would have to use on your customer and would be the means of keeping the number of cabinets in use down. If the customer had to pay so much per hole, he would not be so anxious to have, say, six holes—if he had to pay 25 cents per hole a week, that would be \$1.50 per week, and he would get along with a two-hole cabinet and only have to pay fifty cents per week. I thoroughly believe it would have a tendency to keep down the number of cabinets. I would like to see that adopted in this State. I believe they are working on that in Portland

now.

E. Love, Flint, Mich.: I am a visitor here from Michigan, Mr. Chairman, and there in our state last year there was an agreement made, starting at the convention, among the ice cream manufacturers, to charge for all cabinets. The dealer is sold the cabinet outright, and if he wants a dozen cabinets it is my to him. If you gentlemen can do that, you have eliminated at once an enormous overhead in cabinets. That movement is very strong in the East now. You will find in many places they are starting that. They have not carried it entirely through, not so far, because it is not old enough. I thing it is only about this time last year, after the conventions in the Eastern States, that the question was taken up, and Eastern States, that the question was taken up, and are going forward and charging for the cabinets. Last year we put out a large number of cabinets, and we charged for nearly all of them. There are some people right in our own community, there are some people right in our own community, there are some people right in our own town, that do not pay, but all of the cabinets any ways out, to whom we do not deliver regularly, we charge them for them, and that helps a good deal. I am not referring to Detroit, but farther north in Michigan. But that is coming along, more or less, and I think you are going to find more

of it done right along.

of it done right along.

that connection. We have met with this difficulty in that connection. We have tried to sell the calonet to the dealer, but he world tup one, perhaps he will make one out of a drygoods box, or use a tub, and in that way you are wasting, like what you might save the charge of so much per hole would help out more—a dealer would then be furnishing the proper kind of calonet to his customer, and not more than he needs. But even then you may run into the dry goods box idea. Perhaps a still better idea would be to charge a price for your ice cream that will cover that charge, and then let the manufacturer use good judgment as to how far he will grant the request of the man and storing for the manufacturer use good judgment as to how far he will grant the request of the manufacturer use good judgment as to how far he will grant the request of the man uskning for three or four caloniets.

The President: In regard to what Mr. Wilson suggested, it strikes me as possible that it would be a thing we would do well to consider, whether we ought not to have a committee on standardizing our service, or a committee of recommendations as to improvement or standardization in our service. would make it broader than merely a committee to consider the number of cabinets that we would furnish or the number of holes we would permit the dealer to have without additional charge. I think we will find, if we stop a moment and think, that there are other fields in our service that need attention as well as that, and I am not sure but what the suggestion is a good one that we ought to have a committee appointed to make a study of service as it is being handled and go into the general subject of service thoroughly, so as to make recom-mendations for improvement therein, which would include the matters discussed as well as any others properly within the scope of it.

J. M. Coutreas. Phoenix. Arizona; I make a little money in the summertime, and I lose it all during the winter, trying to help customers get through the winter ready for the next summer. We keep track of the ice that we use in these cabinets, for re-icing, and then keep track of the number of gallons they use per month. At the end of the month we divide the number of gallons used into the amount of ice used, and we know the average pounds of ice it takes to ice a gallon of ice cream. One customer will average ten, and we have a customer that averages speak for themselves. I figure them out myself, and I know that they are correct. You say, "Why don't show that they are correct. You say, "Why don't using a big percentage of ice, and I figured out it was too high, and I went to him one day, and I said, just as Mrs. Babeock says, "You are using a lot of ice for the icing now, and winter its coming on, and I would like to know if we could arrange it some way that you could cut your average down." I said to him. "If you could cut out two of the flavors, then it will take just one-third of the ice"—he had three. And three.

he said, "No, I want the three flavors in my cabinet, and if you can't do it, "Il get somehold else to do it." I said, "We can't do it, It is too much." Then he went up in the air. If there is any solution to this I would be very glad to try it—very glad to try anything that is practice.

J. E. Miller: I think Mr. Carver got at the root of the whole matter. We are smart enough not to do things at a loss, if we will but get together. But that seems to be where we are weak, on that gettogether proposition. It certainly would seem that we ought to be smart enough not to do things at a loss.

Mr. Wilson: I understood K. L. Carver to say he thought it would be better to charge the customer the price and give them all the cans he wanted.

K. L. Carver: Be reasonable about allowing them to have cans, of course, but where we are in a relation with the other companies, that is a matter that has to be brought up and regulated. Don't let them abuse the privilege any more than you actually have to, but at the same time make the price of your ice cream high enough to cover some of the abuse that we find in the business. I think, perhaps, that is better than to try to solve it in the other way that has been suggested.

Mr. Wilson: If you made the price high enough or some little customer, wouldn't you be too high on the big customer? You are in favor of the one price, I take it.

K. L. Carver; In Los Angeles we used to have different schedules of prices, because it seemed logical that the big dealer was entitled to a better price, because he used more gallous of ice cream. But that meant continual trouble, because the dealers who used a lot of ice cream and got a lower price were inclined to underself the small dealer who did not have the advantage of the lower price and as 5 s.w. what did not the control of the lower price and the control think that the best thing we can work out is the oneprice system, big or little.

Mr. Wilson: Several years ago we had the system in Fresno of charging 25 cents per hole, and we found it to work out very well. In other words, I have just figured out here. I think we charged fifty cents per week per hole, and the man that had four holes would pay \$2 a week. If he handled 200 gallons per week, that was one cent a gallon. On the other hand, the little customer down here that handled five gallons a week would be charged say 20 cents a gallon for a cabinet. It worked out fine, because it would give you that extra price per gallon to pay for the extra trouble of icing the five-gallon container. In other words, he paid one dollar per week for a twohole container and when he only handled five gallous per week he was really paying 20 cents a gallon extra for the icing as compared with the man handling 200 gallons per week who only paid one cent a gallon for his icing. We found it worked out fairly well, and used it until competition came in and said they were not going to make that charge, and of course, we had to discontinue it.

R. E. MacFarland: All of those things, which are happening all over the country, resolve themselves right down to what Mr. Carver stated a few minutes ago—it all depends upon the man who is selling. If he wants to do this, he will do it, and if he gets himself into a peck of trouble, he has no one to blame but himself. On the cabinet proposition, up in Montana a concern, if a customer wished a cabinet, prepared that calinet for him at cost, and then the cabinet he beginner of the concern, if a customer wished a cabinet, prepared that calinet for him at cost, and then the cabinet he beginner of the said. "I will furnish this customer his cabinet." Those things developed year after year, and they have come to the point at which they are at present. Mr. Brown does this and Mr. Smith does the other thing. They are all trying to meet each other. If we can only get together and co-operate and try to bring something.

about where we can avoid these things, I think it

will stand us in good stead. Mr. Beaudry: It seems to me that the cabinet charge or the charge per hole is a much more important thing than K. L. Carver thinks. An that is so because if you do charge so much per hole, it takes care of the icing charge without having a charge of so much per bucket of ice and salt-there is no question about that-and it keeps the customer using less flavors, which is really better, because he will use less ice in that way. Then the customer, by using less flavors and using less ice will make the cost of his ice cream to you less. If you have followed the ice cream business, as you probably have, when it first started there were very few flavors, and so there were very few cabinets. If you go into most ice cream factories nowadays, you see two or three floors of cabinets, some of them in pretty bad shape and some of them in good shape. It is just like the question of small customers—small customers used to be very important, but I doubt very much whether they are of so much importance now. Because, where you see a place where there are three or four ice cream stores in a block, say, or on a street, I don't think it increases the ice cream business to have another one in the same block or close vicinity. used to figure that by having an ice cream store on every corner, we were increasing the ice cream business, and we were willing to sustain that. I remember that two years ago we made some figures in Los Angeles, and we figured out how many customers we had using below six gallons a week, and then we brought all the data together, and some concerns had as many as two hundred customers using less than six gallons a week. Then we figured up about how much a gallon of ice cream cost to deliver. and we finally came to the conclusion that if we didn't have any customers at all of that kind, we would be better off. And we started to charge an additional charge for six gallons a week, or less, and we finally had to drop it because, as Mr. MacFarland said, it is a question of each having to meet the things done by his competitor and keeping a thing like that up. Any such a movement is a hard thing to start out, and it is pretty hard to keep it up. But I think Mr. Wilson's suggestion of appointing a committee to look into the service subject is a very good proposition, because I think that will help bring the cost of ice cream down by bringing the cost of delivery down. Mr. Vahlberg: I would like to move that we appoint

committee to look into the matter as referred to by

Mr. Wilson on the abuses referred to. Mr. Wilson: I second the motion.

The President: It has been moved and seconded that there be a committee appointed on abuses of the industry and recommendations for improvement in the service. Is there any further discussion? If not, all favoring the motion will make it known by saving aye. Opposed no. The motion prevails.

D. M. Dorman: Mr. Chairman, Los Angeles has

been heard from pretty often, but you know we are for tooting our horns down there, and I would just like to have a moment for discussion of the small packer. We have perhaps dropped the general subject we started out to discuss after Mr. Miller's talk, and been referring principally to cabinets and icing. Our belief is just this, Mr. Miller, that while our cost of delivery for the individual small pack-age to the residence is high, and while we are not able to see any direct profit in that, yet we believe that we do get some good advertising from it. I think we all spend quite a good deal of money on advertising our product, and feel that it is necessary in order to develop volume of business. seems to me, then, that it resolves itself into the question of an expenditure for the purpose of advertising that we sustain a loss and feel that we are justified in doing so, in getting this family pleased. Some of our best advertising men say that one of the principal things to think of in advertising a product and getting a message home to the people is, first, to present something to the person we wish to reach.

It seems to me that that is one of the avenues through which we may be able to develop business. It is said that not only is the first item of importance in an advertising campaign to present something that is of importance and interest, but the next is the item of convenience, Is it easy to obtain this article Is it convenient for the housewife, and can she do so without very much trouble, and can it be de-livered at her door without interfering with her other duties particularly? In that service we are fulfilling that particular feature of her desire, and we are pleasing her in that respect. And the matter of cost is, according to those advertisers, way down the line-fourth or fifth in importance.

New Ideas and Practices In the Ice Cream Industry, by Robert J. Dryden, of the Dryden Humphries Co., Oakland.

I am rather pleased that they limited my subject to "New Ideas and Practices" rather than "Good' ones. because we can't all suggest good practices, but we can suggest those that might be applicable under certain conditions.

Naturally, I am more interested in the manufacturing phase of the business than some other features of it, and I shall endeavor to contine my remarks to the practices we have to suggest in the manufacturing end of the subject.

I find that during the last few years, and this from observation and discussion with manufacturers throughout the country, that there has been more or less of a change in the formula and the product manufactured. There is a considerably higher percentage of solids used in the manufacture of ice cream now. And in most instances it is more palatable and the manufacturers have been able to use a larger amount of the skim milk products, and possibly their sales have been materially increased, because of the bettering of the quality of the ice

We are faced now with a problem that has been touched upon lightly, and that is the reduction of prices. I would like to make a suggestion there, and that is that it is my idea that if the manufacturer will be careful in adjusting prices, and take half of that ten cents that he would perhaps wisely lower the price of his ice cream, and buy five cents worth more of butterfat, or some other material substance that goes into the mix, he can save that amount on his advertising, on his service, and some of the other factors in connection with the business. I think that is as important as any other thing he can do at this time. Never in the history of our business have we had prices so high, and we have got to a condition now where our prices are right at a peak and must drop, and if we can be careful in adjusting and lowering prices to maintain a high quality of product. that will be accepted by the public, it will encourage sales and increase our volume of business, and if we have a product that is readily accepted, that people like and which is palatable, they will want more. It is noticeable, the increase in sales that can be derived from the sale of good ice cream. On the other hand, if prices were to adjust back hurriedly to a low level. we are not certain of market conditions, and we may be faced with a condition that will mean a very considerable loss. We must remember that our material cost, as it is now, under this market, is not our entire cost, by any means. We have our material cost, we have our advertising cost, our overhead cost —and our overhead is built largely of service, by sales and advertising. And we can save there a little, as I have indicated, by giving a high grade of ice cream.

There is one thing that I would like to mention, and that is the five-gallon unit system of distributing ice cream. That is applicable to all conditions, and with the small concerns or concerns just new in the business, we have found it possible to market our ice cream on the one unit five-gallon system. And since the day we started up in business here in Oakland, we have conducted our business along that line, and there has been no opposition, customers take it favorably, it is a dead issue with us—never came up for discussion. We solicit business, and it is an accepted fact that a five-gallon unit system is practicable.

I am aware that that is not so applicable among the old, established concerns, where they have been served with one, two, three, and five-gallon containers, With them, I think the first thing to do is to eliminate the two-gallon container in the delivery of ice cream. I don't think the competitive factor enters there, I think that it is a matter of will power on the part of every manufacturer to try to better his conditions, and to start by throwing his two-gallon containers out, starting at the next season with three and five, and then I think the time will come when there will be but the one unit system of distribution of ice cream among the large manufacturers. We have found that the larger your unit, the smaller the number of holes you serve. If you have a fivegallon service, you won't have trouble there. That is a fact. We show that in our own business, that where people have to buy five gallons of ice cream and pay for it, that they are not going to buy many flavors, not as many as if they were to buy it in twos. If you have to pay \$7.75 for a container, you are not going to carry such a large stock in that. And I would like, during the Convention, to have some discussion on the five-gallon system, because we have operated long enough now so that I am glad to bring this question up, as I have done, and to show our position. We are satisfied that it is eminently practical, and it is a basis for every manufacturer to work for-a smaller number of units and larger units. We operate under inconvenient circumstances in our factory today, and that is the only thing that makes it possible. We would not be able to operate under the same conditions if we used two. three, and five-gallon containers. I would like to have some discussion of this single unit system of distribution.

But before we come to that, I would like to discuss something that has already been talked about this afternoon, and that is, brick sales, the matter of encouraging brick sales. In the South they have told us they have adopted the plan of changing flavors. We have found that rather cumbersome, and not so well accepted by the dealers as the plan of a weekend special with our regular three-flavor brick during the balance of the week. Where the dealer gets the different flavors in every package, we find that it is neessary for him to carry chocolate, vanilla, and strawberry, and the regular Neopolitan product, in addition to the special flavors that come out every day. Do 1 understand, Mr. Chairman, that you are putting out a different flavor each day?

DISCUSSION

The President: No, we are not putting out a different flavor each day. We have found the plan of doing up packages of brick with a variety in each package, we put in two quarts and four pints in a gallon package, and have a variety. That, however, proved a little bit unsatisfactory to our trade, by reason of the fact that the customer would come in and want a brick of ice cream, and would ask the dealer what he had, and he wouldn't know what he had, and he would have to go down into his cabinet and look the products over. There was a good deal of complaint, and a lot of our customers insisted upon the Neopolitan brick of ice cream. We then developed the system of putting on a new brick each week. But then we found that the customers would get to expecting a new brick every Monday morning, and if the weather turned cool and we had some left over, they would feel that we were giving them left-over bricks. We have been operating a system of carrying Neopolitan in stock and carrying plain vanilla in stock, and then have a special in stock, and we might run it a week or a month-whenever it seems right to change, we make the change on certain days, and send the word around to the drivers so that they know what to expect, and we do that whenever we see fit. So it does give the trade a chance to have something different every week or two, and yet there is the Neopolitan and the old three.

Mr. Dryen: I think it is to the interest of our business to encourage brick sales. We are interested here in increasing our brick sales, and it has amounted to an increase of from 7 per cent. in September last year to nearly 26 and a fraction per cent. this year. We don't really understand what has brought it about, other than there has been a tendency upon our part to encourage the dealer to sell bricks, at least for the same price as the bulk cream is sold, and a great many dealers, in fact, sell the brick for ten cents higher than bulk. We have been able to show them that the profit on the brick ice cream is greater than it would be on the bulk ice cream, although they do pay more per gallon for brick than for bulk cream. We are interested in an increase in our brick sale, because we have to have advertising anyway, and every package of ice cream has a trade name, and we get a wide distribution of our trade mark, and if the cream is good, that is the best kind of advertising. It is more direct than any newspaper or other character of advertising. We even went to extremes, and put out an individual brick in one-gallon packages, forty individual bricks to a gallon, and we charge \$2.25 a gallon for it. and there were certain channels in which we found a profitable business. And the interesting part of the program was that we got a wide distribution of the trade mark, which is so advertised, and as long as we were able to maintain a satisfactory selling price, it was profitable business. It is detail work and requires considerable labor to take care of it, yet we consider it a profitable business.

Coming back to the matter of quality of ice cream or the material cost. If we could be sure of maintaining price conditions throughout the State, and keep our prices higher than they were before the war, and take part of that money that we so rightly are willing to give the customer, and apply it on our material cost, I think the composition, the material we make it out of, would make a less costly service and it would help us in our policy toward our customers. Of course, if we do everything our customers ask us to do, we will be in the same position as our friend from Arizona. We certainly must have a policy, and we can exemplify that by the fact that we say to the dealer, "You must sell five gallons of ice cream and take five gallons, take it in a five-gallon container." It is necessary to have, to a certain ex-tent, a policy of service and stick by it. It is not tent, a policy of service and stick by it. It is not matter of competition, because you can do certain things without agreeing with your competitors, although I naturally favor co-operation among manufacturers. But it is upto all of us to better our own conditions, and in doing so, we will encourage the good will of men who are in the same business in our locality.

The President: The subject Mr, Dryden has just presented is a very interesting one, and I would like to have discussion of it. Mr, Dryden is anxious to hear a discussion on the five-gallon packing can. Mr. Dryden, do you know, is there any other dealer in the State doing the same as you are, that is, limiting

the whole output to five-gallon packages?

That is the Mr. Dryden: Not to my knowledge. reason we have discontinued delivering retail orders, even though we got \$1.50 for the first quart, and a sliding scale down. But we won't even retail in bulk in less than five-gallon lots, unless they take the special cream that we sell for considerably more money—that we will sell in any quantity.

The President: Someone said that in the East they

had been practicing the five-gallon system for a number of years, other than in the winter, I think.

Mrs. Babcock: I was quite surprised to see so many three-gallon containers used out here. We think back East that California is an all-the-yearround State in the business. I was very much sur prised when I came out here to find that you had your seasons in the ice cream business, as it seemed so entirely natural for us to think of you as having the business all the year round. Our winter business has developed so that, we are running nine trucks today from our store, to drug stores and other places. I don't know whether you people use a restaurant wagon, or not, but we have a great deal of restaurant trade and, of course, they take it in three-gallon packages, but we do no packing of that—the restaurant trade is a different business. We get more money for the restaurant trade than for our wholesale trade ordinarily. The restaurant price is \$1.45 to \$1.50 a gallon on the plain vanilla, and the drug stores get it for \$1.35. I think you people are getting more money for your cream out here than we get. For a long time St. Paul and Minneapolis have really been two of the cheapest cities on the map for ice cream, because we have sold ice cream there as low as fifty cents a gallon.

The President: What is your standard for butterfat?

Mrs. Babcock: It is 12 per cent. now, but at that time it ran along at six or eight per cent.

Mr. Dryden: Do you have any one-gallon cans? Mrs. Babcock: We don't sell any one-gallons in the cities at all. And talking about the shipping the cities at all. business, we don't ship anything less than five gallons at a time. We don't make a smaller shipment to the country than five gallons. And in the bricks, if they want three gallons of bricks, we ship them three gallous of bricks. And if there is a party in the country, they pay the express both ways on the cream shipped, and the container coming back. There has been a great deal of discussion about the express, but we have had fairly good service, but they don't return any empties free-we have to pick up our empties.

The President: That is, you send trucks out? Mrs. Babcock: No. The Express Companies pick

them up and take them to the depot and pull them out for us, and we get the first pick-up from the Express Company in the morning at seven o'clock, and

we get one at eleven and one at two and one at four.
Mr. Dorman: Mr. Dryden, do you have any trouble about the five-gallon container delivery during the wintertime, when they are using so much less?

it troublesome to you?

- Mr. Dryden: There is no question but that there is some criticism, but it does not irritate us or give us any trouble. If we want to be very technical, we may say the cream was held too long. But the advantages are bound to offset the disadvantages, and then, it is possible that cream is held too long under certain conditions. But I repeat that I don't think the disadvantages compare with the advantages of the fivegallon system. There is this much to be said about winter shipments, and that is in the country, when they have to buy the ice, where we don't take care of it, where we don't give cabinet service, there is a good deal of complaint—they don't get ice often enough, and are not careful enough—that is the one real serious objection to the five-gallon ship-ment business in the winter. In the summer I don't think they complain.
- C, E. Platt: I would like to ask Mr. Dryden if he does not think he would be furthering the industry more if he gave the customer whatever quantity he wanted, so he could use it up quickly, thereby having the quality of the product given the customer su-perior to that which he would get when served to him in five-gallon packages? We have thought down in the south that it was our duty to the industry to give them a smaller quantity, so they would have a fresher supply, and we would like to know if they find it contrary to that in the northern part of the State.
- Mr. Dryden: There may be a disadvantage, although I won't say that there is, in holding your cream too long. I think it is recognized that, so long as you are keeping your product carefully that you can keep ice cream several weeks, and I don't think there is nearly the disadvantage of holding the cream in cabinets under those conditions, where the temperature is not so low as it is in the boxes. When you get the temperature down too much, there is bound to be a breaking down, a crystalization. And I can't see that there is any serious objection to holding the ice cream in containers when it is properly held-I don't think there is any particular deteriora-tion in holding the cream until it is used up out of the five-gallon containers. If there is, it is such a short time in the winter that the advantage in summer will make up for it. The big advantage is that, if the demand is heavy, your customer has got cream, and it is a rare occurrance with to have to send out special deliveries, where if the customer has a cabinet of twos or threes, then your customer, on a hot day, is back and wants some ice cream rushed over to his place at once. And by the way, it is not the big customers so much as the small ones that get in that position,
- Mr. Wilson: I would like to ask Mr. Dryden if he would recommend all the members of the Association to stop putting in smaller than five-gallon unit
- Mr. Dryden: I think I should be the last to recommend a thing like that, because you men are in business and have got your trade established. only say that it was perfectly easy for us, because we started out with five-gallon containers. Mr. Miller and Mr. Vahlberg might have some difficulty in doing it.
- F. E. Miller: We have slowed down on the threes. because Mr. Dryden has set an example and he is winning out with it, and I am on the other side of the fence and I know he is, and it is a good example for the rest of us. After I sell all those two's, I

don't know, but I think I shall recommend that we cut them out.

Mr. Love: I would like to say that down East we hardly ever see less than five-gallon cabinets. I havent seen a three or a two-gallon cabinet in almost en years, and I have been in business all that time. I will venture to say it is very close to ten years, in any event. They are all fives, of all flavors.

Value of Brick Ice Cream As a Trade Builder, by W. T Vahlberg, National Ice Cream Co., Oakland.

The trend of the public demand for a package article (especially in the food line) has almost revolutionized the manufacturing department of every plant engaged in this line of business during the past decade. It was but a short time ago that the ordinary soda cracker was handled almost entirely in the bulk form. The transition required an intensive advertising campaign in order to educate the public into the advisability of purchasing an article of food untouched by human hands. The same changes have taken place in many other manufacturing plants. The ice cream industry has undergone some radical diversions along these lines, especially in the handling of volume business.

In its infancy, the wholesaling of our product was confined to bulk ice cream in containers varying in size from one to five gallons, in flavors of vanilla, strawherry and chocolate. Gradually, the number of flavors were increased, and the larger dealers began featuring the brick ice cream for Sunday and dinner desserts. Very few stores would justify a brick cabinet, which necessarily meant additional expense in re-citing and keeping the bricks in salable form and condition. Now, there is hardly a dealer who would be satisfied with handling the bulk cream alone. Some have discarded the bulk cabinets entirely and feature only ice cream bricks, either in prints, quarts, sliced or in individual boxes.

The convenience of sale of the brick package (in any sizes desired) has found ready response with the dealer as well as the ultimate consumer. But the burden of expense in preparation and care of this delectable dessert had fallen entirely on the manufacturer, who finds himself compelled to enlarge and re-arrange his brick department many times, in order to keep up with this growing demand. One feature that has been instrumental in furthering the sale of the brick package has been the war tax, which does not apply to the bulk sales. Many purchases are now made in quantity size instead of the isual cone sales. This increases the volume of ice cream consumption very perceptibly.

Another feature that appeals to the public is the variety of flavors obtainable in the brick, as compared to the bulk carton, which is usually confined to one or possibly two kinds of ice cream. The dealer is particularly pleased with making brick sales, instead of bulk, as he knows exactly what his margin of profit will be. The time saved in dipping ice cream into a carton is quite a factor, especially during the warm season, when the peak of sales is reached. This leads to closer co-operation between the manufacturer, the dealer and the ultimate consumer, for after all is said and done, co-operation is the watchworld for success in every undertaking, commercially

and otherwise. The trend of all successful business enterprises nowadays is toward mutual co-operation, in the place of cut-throat competition, which has been the cause of so many financial failures in the past.

Practical co-operation has come to stay. Beginning with the producer, the farmer, fruit raiser and dairyman each have their own co-operative organizations for the handling and distribution of their products. These organizations include in their membership nearly every producer of farm commodities. Through their methods of marketing by co-operative efforts they have reduced the expense of this department considerably, which in the final analysis redounds to the credit of both the producer and the consumer. Many of the distributing companies are now including among their stockholders the producers of the products they handle, which brings them in close touch with every phase of the industry, as well as allowing them a share in the profits of marketing. There is also a tendency of extending the stockpurchasing privilege to employees, in order to effect a more loyal feeling between employer and employee. and thus strengthen the organization and engender a more lasting faith among their immediate associates.

Co-operation among dealers and manufacturers of ice cream has proven a valuable adjunct to the industry, as well as giving a greater confidence to the public at large, who have learned to appreciate the fact that our organization is striving to improve the standards and quality of the finished product offered for their consumption. At the Los Angeles convention of the National Association of Ice Cream Manufacturers, it was aptly stated that this industry (more than any other) controlled the destiny of the future generation of American citizens. Inasmuch as the greatest number of our sales of ice cream in the cone or sliced brick form were made to children, and the purity of the tissue building content would enter largely in the proper development of the child of today and the man or woman of tomorrow.

Speaking of co-operation and teamwork, I might quote from the recent utterances of our President-elect, Hon. Warren Harding, who said, "I have always believed it to be the most helpful and useful factor in getting accomplished the worth-while things of life. When I started out upwards of thirty years ago I said to myself: If you are going to succeed in life, you are going to do it by getting ment to work with you, rather than against you. You are going to do it because you will respect the feelings and rights of other people, rather than by ignoring their likes and dislikes. You are going to watch your step, with the idea of keeping off other fellows' toes. You won't get big things done in this world without friends and well wishers.

"That is still the main principle of my life. I am taking that rule into the Presidency, with the determination to apply it to domestic problems and to international problems. No man is big enough to be President unless the works with honest, sincere, forceful men; unless he is big enough to understand that he doesn't know it all; unless he is generous enough to trust other human beings; unless he gets team work." I am going to close with this admonition, that the members of this Association should pull together, one for all and all for one, so that the next year will show a greater interest and enthusiasm among its members, and increased sales will surely follow. We must have implicit confidence in each other, be true to each other and at the same time be forgiving enough to overlook any trifling error others might, make, as to err is human, to forgive divine, and we are all human after all.

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Mr. Hightower: It is my belief that the sale of brick ice cream is the best avenue for the distribu-tion of our product. It is a neat and sanitary package, and it is easy to carry, and I think that if the manufacturers will foist the sale of brick ice cream, it will tend to solve some of the problems we have been talking about today. For instance, the most of the trouble we have in the section where I have been operating, regarding the surplus cabinet ice, etc., will practically be eliminated, because it is the small dealer, who uses less than ten gallons a week, who causes us the trouble. If we can educate the dealer to the point where he is sure that he will make more money on selling brick ice cream than any other article in his store, he will cut out bulk ice cream and push the brick cream. I believe that we met with some success along that line this year. able to go into a groceryman who had been handling bulk ice cream, and show him where he could make twenty-two and a half cents on every quart of brick ice cream that he sold, with the same effort that it takes to make a cent and a half on a loaf of bread. I think if we would educate the dealer along those lines, we would do away with a lot of the surplus holes and expense involved in a cabinet. I might say, too, that it will help solve the retail end of our business. If the housewife, or anyone wants to take some ice cream home, they are not afraid to go into the place where the scoop is liable to be dirty and the place not just exactly right, for this package is already put up and they can come in and get a convenient, sanitary, neat package, and take away with them. I believe if the dealers throughout the country would appreciate that fact, and investigate it, they would find a lot of their troubles would

be eliminated. The President: I think Mr. Hightower's point is a good one, that any small dealer who carries vanilla ice cream and brick ice cream has a good assortment. He has reduced to its smallest form the proposition of a good assortment of ice cream, that will satisfy the public, and then, it will develop a larger sale over the counter to the public generally as well as the dish service, and enlarge the dealer's profit. I want to say another thing also, that several years ago, in a trip East, visiting a good many of the large Eastern plants, I was astonished at the large percentage of the total output of some of the large Eastern concerus that went out in the form of bricks, and it was very surprising to me to hear them tell how much they attached of the successful result in developing their business to the pushing of the sale of brick ice cream. One of the concerns that stands out prominently in my mind is that of Mr. Luick, of Milwaukee. He claims to put out the largest of Milwaukee. He claims to put out the largest percentage of his ice cream in brick form of any of the Eastern concerns. It goes everywhere, not only throughout Milwankee, but the whole of the State of Wisconsin within two hundred miles of Milwaukee. And I have often thought that if the rest of us could accomplish anything like the results or have the results that have been accomplished by Mr. Luick in developing enormously the business, in a city not anything like as large as those in which some of the rest of us are doing business, and withont nearly the populace in tributary territory that

we have, and yet has developed a business way beyound what it could otherwise be, we would be doing a creditable thing. He insists that it is largely due to the quality of the brick ice cream that he has put out, and that he has pushed the brick ice cream, and that that has done more to win him the prestigeand that that has done more to win him the prestigejudge his entire output from his brick, and he insists that he has gained in that respect also, and I believe he is right.

Mr. Wilson: I think Mr. Hightower has, brought

Mr. Wilson: I think Mr. Hightower has brought out one of the most important points of the entire session so far. I can truthfully say that I have one customer in Fresno having six holes, two three-customer in Fresno having six holes, two three-is putting in one ten-gallon brick cabinet, and he is selling double the amount of ice cream that he sold before, and he is a satisfied customer and pushing the business. It is a little corner grocery, and when the subject was first broached to him, he didn't care about selling it, didn't care to bother didn't care about selling it, didn't care to bother bricks exclusively.

Mr. Vahlberg: Some of our trade here devotes when the subject we of our trade here devotes the selling bricks exclusively.

Mr. Vahlberg: Some of our trade here devotes itself entirely to the brick business—quite a few of them. There are dealers we know who won't sell a cone, who will drive a man next door who wants to buy a cone, but they will sell bricks.

The President: When you stop and think that

The President: When you stop and think that brick ice cream, if it is properly taken care of, if it is hard when taken from the container and piece of newspaper or anything at the store where you buy it, the public can take home a brick of ice cream on the car or in a machine, and that brick will keep in condition to serve it for two hours, it would seem to be evident that there is no other form in which the public can avail themselves of ice conveniently as they can in the brick form.

cream on the dinner table at home of an evening as conveniently as they can in the brick form.

Mr. Hightower: There is another advantage in pushing the sale of brick ice cream. I don't know whether all of us here appreciate the fact that the average decrease in the wintertime business in the State of California is about 70 per cent, in the worst winter month over the best summer month. And I believe that if all the manufacturers would commence, early in the summer, to promote the the homes of eating ice cream, and therefore bring about an increase of consumption in the wintertime. and bring it somewhere near what it should be. It seems as if we have all been asleep in this State, so far as our winter business is concerned. gathered some data in the East and the Middle West, gathered some data in the casts and the addition and I find in many places where the winter weather runs below zero, the decrease will not go over twenty per cent, while here in California, where we are supposed to liave the best climate in the world, it is seventy per cent. I investigated that and experimented a little in our territory. On the 27th day of November last, the temperature was 87 degrees, and on the 6th day of August it was also 87 degrees. The decrease in the consumption of ice cream in November, at the same temperature as on the day in August, was 78 per cent. Now, the people in this country take it as a matter of course that they do not eat ice cream in the winter. is a condition that we are all most anxious to remedy. And I believe that the pushing of the sale of brick ice cream will tend to increase our winter consumption, if we will all do it. I think it can be done, without a doubt. Mr. Dorman: 1 will state for Mr. Hightower's

benefit that I yesterday read what I think may be an explanation of that. In the East they wear heavy clothing and heavy underwear in the wintertime, and their houses are well warmed, as are their restaurants and cafes and the eating places, and as a consequence, when people get in there and sit down, they enjoy a plate of ice cream. In California, our climate is so favorable to us that we don't even have stoves, and we observe as we walk along the street that people are not very warmly clad. I believe that the fact that our houses are not warmed nearly so much, and that the restaurants and cafes and hotels are not kept so warm, and people are not dressed so warmly, has quite an effect upon the labit of the people with reference to eating ice cream.

Mr. Hightower: With the proper education, the ice cream trade could doubtless make the general public see what they themselves know, that ice cream is one of the best foods they can eat, and if we have to go at it that way, let's do it.

The Good of the Industry, by W. B. Hage, Sanitary Ice Cream Co., San Diego.

My first point is advertising. We have done a good deal of advertising in the last sixty days, and I think I will tell you what the results have been. Our business has been going for seven or eight years, as some of you know I was in the creamery business for seven or eight years, but it was in the hands up to the 1st of November of a gentleman who had some stock as manager, and when we took it over we went to work on entirely different lines to spend considerable money advertising, and in the last sixty days we have had a chance to see what the direct results were from the advertising, and if you don't mind, I will give you a line as to how we went at it.

We standardized on one thing: "Eat Sanitary Ice Cream, a Real Food." We have got twenty-eight tubs out in the country, twenty feet high and ten feet across, on the different roads, and you begin to run into them when you get to Oceanside, and when we got into town, we standardized the advertising at the customer's place of business all we could, and we have a window of stained glass that we put on if we can, and we have signs put on over their doors. But I want to say this, that if you are in the congested part of town, or down town, where people are walking, and are trying to stop them to get them to look at it, there is all the difference in the world if you put your sign down low. A sign over a door does not do so much good-they don't see it. But a sign in the windows or in an alcove, we standardize in that on the same thing, indicating that they should eat sanitary articles, and we put the word "Food" on, and I think we are getting through with that. Those customers that we have done that with have shown an immediate increase. You can just see their account start right up, a week from the time the sign was put up. They are just ahead of the game.

When it comes to cost accounting, I think it is a good idea, if you can follow this up for a time, to run a cost accounting on individual customers—say for a week at a time. If you keep close tab on the customer, as to how much time and ice and so on you put in, why you will find, as we have, that there are customers who run the expense up to as high as fifty cents a gallon from the time the ice cream leaves the platform. That would be an extreme case, of course. We have had one or two that way. We have always had an icing charge, and that holds

that down. But where we spring an icing bill on them of thirty cents a gallon, they will only pay such a bill once, and you will find that they will cut their number of holes down, perhaps, from four to two, and that saves a whole lot of trouble with the customers.

I think we can't keep too close a tab on the matter of cost accounting, right down to the individual customer, if we want to make money in the icc cream business, and I think, as I have stated two or three times before in this Convention, we have not yet had any big decline in our expense, aside from the cream and spagar, and I don't know of any chance for any big decrease anywhere else in the near future, and we will have to remember that when we come to cut the present price.

BABBITT METALS

What is babbit metal? You may be surprised to know that there is only one babbit metal and that is the formula compounded by Isaac Babbitt about sixty years ago, for which Congress gave him a gold medal and \$50,000. It is composed of 8.89 per cent. of in, 3.7 per cent. of copper and 7.4 per cent. of antimony. The fact that he died in an insane asylum does not detract from the merits of his, formula, because it has been the standard for high-grade anti-friction metal for many years. All other lining alloys have been attempts to improve this formula in its physical characteristics or reduce its price. By custom these have been called babbitt metals, even though they contain no tin or copper, but, like No. 4 labbitt, consist of lead and antimony.

What are the physical claracteristics of the elements that compose a lining alloy? Let us take genuine bablitt for our illustration. Tin is a crystalline metal, is very malleable and takes a high polish, but it would be too soft to use as a bearing. The addition of 7 per cent. of antimony makes it harder and gives it compressive strength, but also increases its brittleness, so copper must be added to give it toughness and tensile strength. The addition of 7 per cent. of antimony and 4 per cent. of copper to 89 per cent. of in brings up the Brinell hardness to about 28 or over three times as hard as source in

Now, while tin and antimony are antifrictional, yet they are not the best antifrictional metals. Nature has given us lead, which is oily and greasy and is the best metal for antifrictional purposes; but unfortunately pure lead is very soft and by itself has no value as an antifriction metal. Unfortunately again. it is very hard to alloy other metals with lead. For instance, it is impossible to make a true alloy of lead and copper. In spite of the claims that are made for the leaded bronzes, no alloy of lead and copper, no matter how carefully made will stand remelting without segregation. This is because there is no affinity in the metals. On remelting this metal, the lead sweats out and settles to the bottom. This is what prevents its use as a lining alloy.

Lining-alloy manufacturers, recognizing the value of lead as an antifriction metal, have tried to use as much lead as they could, which has brought about a series of alloys ranging from 92 per cent. of tin and no lead, down to 95 per cent, of lead and no tin. It is a well-known fact that a purchasing agent can always buy a babbitt me;al at his own price. This can be readily understood when the prices of the metals are taken into consideration. With tin selling at 75c. a pound and lead at 5c. a pound, it is only necessary to take out 2 per cent, of tin and add 2 per cent, of lead to make a difference of 11/4c. a pound, and it is almost impossible to tell from examination of the metal that it contains 2 per cent. of lead. This may not work any harm from a service standpoint, because it is a fact that in the use of most of the lining alloys there is a great factor of safety, but it is not the proper way to do business.

There are four fundamental requisites in a lining alloy: Compressive strength, tensile strength, heat resistance and antifrictional qualities. You will notice that I have placed antifrictional qualities last. It is generally understood that antifrictional qualities are the most important, but this is not so. A lining alloy to be of value must first have compressive strength; that is, it must be able to hold up the maximum load per square inch that is liable to be put on the bearings without squashing out. 1: must have sufficient tensile strength so that if the bearings are subjected to vibration or pounding it will not break apart. It must have sufficient heat resistance so that the alloy will stand the greatest possible heat before beginning to flow. Without these three qualities, the quality of antifriction has no great value. As a matter of fact, under ideal conditions the shaft never touches the babbitt metal. There is supposed to be a film of oil between the babbitt metal and the shaft at the time and this is what the shaft actually rides upon. It is when the oil film is not maintained that the antifrictional qualities of the metal become of real importance,

EUROPEAN SUGAR PROSPECTS

In a special overscas trade number the Stock Exchange Gazette (London) discusses the outlook for the sugar harvest of Europe at some length. In that journal's opinion several of the central European countries will be self-sustaining in the matter of sugar this season, though Germany has not yet reached that point, nor has France. England, of course, will be an importer, as no commercial supplies of sugar are produced in the United Kingdom, To quote the Gazette:

In the beet countries of Europe there is every probability of increasing yields of sugar, but respecting cane sugar there is more uncertainty. German raw-sugar factories are fully occupied, and the raw-sngar tactories are tuily occupied, and the quality of the harvested beet is stated to be, on average, better than last year. A yield of 22 to 23 million hundredweight of sugar appears certain—an increase of 0 to 7 millions over 1919. This yield, however, will not obviate the necessity of Germany continuing to import sugar for its own needs.

In Austria also there is prospect of a good in Austria also there is prospect of a good harvest, but here again, domestic requirements will not be satisfied without imports. In Czechoslovakia the harvest is estimated to reach 17 to 18 million hundredweight, a result which will permit between 9 and 10 millions being exported; it is stated that contracts for the sale are now being made. In Jugoslavia the Government has established a monopoly for financial reasons and because of insufficient home production. Hungary anticipates an improved crop, which, however, will not obviate the necessity of imports.

Poland should have 1 to 2 million hundredweight for export. In Scandinavian countries a sufficiency for domestic consumption is expected, but no surplus, and the same conditions apply to Holland and Belgium. The production of France is estimated to reach 6 million hundredweight, against 31/2 millions last year; France, however, requires 18 million hun-dredweight annually. Italy and Spain will produce enough for their needs.

In England large contracts for cane sugar have been made, there has been a reduction in price, the retail sale of Government sugar has been extended, free sugar is allowed an open market, and control will probably cease at an early date.

WRITING BUSINESS LETTERS

The greatest difficulty in writing business letters is to know when to be personal and when to be impersonal. Some readers will take offence at personalities, others will like them. You must know your readers.

The following letter is a good example of intimacy. This is not a good type of business letter and offends more often than not. Moreover, its selling qualities are poor:

Dear Mr. Brown: I decided to sit down and write you personally

today. It's all I can do to keep from giving you Hail Columbia! You ought to be scolded. You haven't

sent an order to us for some time!

what in the dickens is the matter? Doesn't our money look good to you? Don't you like us? How in heck do you suppose that 1, Sol Coleman, peddler of Chewing Gum, Sweeping Compound, Disinfectant, Gno-Gnat, and several other things, can buy boots for my little babies or keep this shack going if you're going to utterly forget, neglect and ignore me in this way!

"Cheerfulness" is my creed, it's true.
"Learn to laugh," my life motto.
"Stop croaking," my sermon.
"Giving pleasure," my greatest pastime.

The dark cloud will fade away if you'll look over the attached Live, Lucrative, Liberal Deals. They are enough to put six-cylinder salesmanship into any man!

We pay you a commission as follows:

												cents
Deal	No.	2	 								 3	5 cents
Deal	No.	3			Ĺ	ì	 Ĺ	Ĺ		Ĺ	54	cents :
Dani	31-	4									2	- acmes

Right in this mail we're sending you our 1919-20 catalog, which is chock-full of big, bristling offers! Won't you go after this good money right off the reel? Kindly keep a record of your sales and we will allow you 7 per cent, on accepted and filled orders through your house on the catalog deals. Now's your time to reap a rich harvest on orders for Christmas delivery on catalog premiums. I sincerely hope you will put on the high speed, because I am mighty sure it will boost your balance at the bank.

I want to keep in closer touch with you from now on and will do everything I can to increase your interest in our goods and splendid deals so that it will

May I hope to hear from you by return mail? You're the man I'm looking to for a whole lot of new business

PROSPECTS FOR 1921

An Address Delivered At the Annual Convention of the North Carolina Ice Cream Manufacturers Association

By H. E. Cartland

Of the Arctic Ice Cream Co., Greenaboro, N. C.

There are a few fundamentals that we can apply and be reasonably sure that we are on the safe side, viz.: Be optimistic, be economical, be on the Job constantly, be always talking ice cream, be making the best ice cream possible, be in a position to know accurately your costs and advertise. If you will follow out these suggestions 1 am sure you will have nothing to fear from 1921.

There is really no cause according to the best information I can get for the general depressed condition now prevailing except that the Federal Reserve Banks have decided that it was for the best interest of the country to get prices and conditions stabilized, and in order to do this have raised interest rates, and our local banks acting upon their influence, possibly have called some loans; refuse to make new loans except at high interest rates, and in many cases refuse altogether. Currency is the most sensitive commodity we deal in, and when the banks are slow about turning it loose the result is felt in all lines.

Prices and conditions, however, are bound to ultimately be based on the amount of circulation in the country, and we today have about 50 per cent. more circulation than we had in 1915. Consequently, in my humble judgment, prices on all commodities, including labor, must stabilize at about 50 per cent. above 1915 prices. Labor will naturally be the last named to seek this level, but it is coming and the sooner all parties concerned meet the issue and get on a stable basis, the better off we will all be.

It may take one year to reach this point; it may take five, not any of us know. But we do know that people eat ice cream. It has a food value, and even if people are not working they will eat more ice cream than when they are working if they have the price. Therefore, let's all make our ice cream as good as we know how; talk prosperity; talk ice cream, and work hard; tell your friends business is good, and it will help to make business good. Someway or other people always like to do lusniess with a concern that is busy and is looking on the bright side of life.

While we are optimistic, it is in my judgment highly desirable, especially at this time, to be also economical. There is no telling how much money could be saved per annum by the members of this Association if each one of us set ourselves to the task of seeing that we saved every cent possible in operating and distributing expenses. All that is necessary in the manufacturing end would be, possibly, for you to be able to compare your manufacturing cost in detail with other manufacturers who keep a cost system accurately in detail. I know that in my own business I have found great discrepancies in costs in our different plants, and naturally the question arises: "If John can, why can't Bill"?

Frequently Bill can if you will show him where his trouble is and get him interested in seeing how good a record he can make. This, in my case, has been very beneficial—playing one against the other.

For the boss to be on the job constantly is of perhaps as vital importance as any one thing. I have no doubt but that the loss in my business of burning gasoline unnecessarily and wear on engines costs my company several thousand dollars a year. I am constantly cautioning our drivers not to let their engines run except when travelling. I have done about every thing I know of to do in this respect to get their cooperation, but the whole truth is I am not getting it. If I could be with each driver all the time 1 could. As it is, I seldom run across one of our trucks on the street standing but what the engine is running; if the driver sees me it is remarkable how quick the engine stops. This is only as an illustration.

As long as you are constantly on the job you think perhaps there is a slack time and nothing for you to do, so you had as well go out for some recreation, and the general appearance is to the effect that you company sustained due to your absence, there is no question but what it would open your eyes. Perhapsome friends of an employee treated to all the ice cream they wanted; perhaps a brick or so taken home by the friend; perhaps some good milk poured in the sewer, or a brother workman's dinner pail filled with sugar, a thousand and one little losses that you will assume on acocunt of your absence that you would not have to assume if you were on the job.

Then be always talking ice cream. What better subject to be talking about than ice cream-deliciously cool and refreshing; a valued food product, made in a sanitary plant. You will find that the average man you meet is always glad to hear something about the other fellow's business, its successes and failures. and every time you talk ice cream to a gentleman friend in an interesting way he is pretty sure to repeat at least some of your points or arguments to someone else, and so on down the line, so that the advantages derived for your company and the members of this Association cannot be justly calculated. As an illustration of this, and our inability to realize how far reaching our efforts are in any line, a Presbyterian evangelist a few days ago told me that he had prepared himself for the ministry as a young man, but soon after going to work entirely lost his voice so that he could not preach, but while attending a service in Atlanta and trying to sing the defective voice was noticed by an Atlanta throat specialist. who remained after the service, introduced himself and told him that he noticed his throat needed attention, and requested him to call at his office the next morning, which he did, with the result that the specialist put him under treatment, entirely cured him; did not charge him a cent, but he was requested to go preach the gospel. This evangelist has been preaching the gospel ever since and says indirectly this specialist is responsible for the saving of thousands of souls; every time a soul is converted through his preaching he is reminded of the specialist and thanks the Lord that this good man lived. While the specialist has gone to his reward, the result of his work still lives, and will no doubt live on forever through the influences directly traceable to this specialist.

Make the best ice cream possible. This statement is of course subject to conditions, costs, etc. I am a great believer in the public being willing to pay for what they get, and that they will remember the quality long after the price is forgotten, and without question, the better we make it the more there will be consumed, which reverts back and helps us to reduce manufacturing and distributing, costs.

As an illustration of this, only a few weeks ago my firm solicited a prospective customer for their business for a special occasion. We were informed that while our ice cream was possibly good enough for standard trade they wanted something better and were satisfied it could not be secured in the South, and they proposed to order from the North. However, our representative convinced them that we could make ice cream as good as anyone, North or South. After finding out what they wanted, a price was made of Your dollars and fifty cents per gallon and the business was secured. The cream was so highly satisfactory, that a great many people wanted to know where it came from, and while we had never made ice cream like this before, as a result of this one order we have already filled a great many orders for the same kind of ice cream at the same price. We are satisfied and our trade is satisfied.

Know accurately what your costs are. There are more people go bankrupt from ignorance of their actual costs, I believe, than from any other one cause. In many instances with a small business there is a tendency to discount the necessity of accurate costs, and this is the very class of business men that cannot afford to go without it. I would like to know, although I do not expect to, how many of the members of this Association can get up an accurate report showing what their manufacturing costs have been this year; their distributing costs, their overhead costs, etc.

Personally, we keep a detailed cost record by the month, covering manufacturing costs as follows: Wages, cream and milk, ammonia. extracts, sugar, syrups and crushed fruits, miscellaneous supplies, fuel, ice, water, lights, power, repairs to buildings, repairs to machinery. Total gallons made for the month, showing the cost per gallon under each head. Consequently, if my total cost for a given month shows high I naturally look to find where it is and am usually only a few minutes doing so, and as a result I know where to go to correct the loss or leakage.

Under the head of delivery we distribute these costs

as follows: Wages, feed and stable, wagons and harness, sacks or covers, truck expense and miscellaneous. Analysis showing number of gallons delivered and cost per unit for delivery. Consequently, by adding my manufacturing cost to delivery cost I have my cost except for overhead, and this is an item that lots of us almost entirely overlook in determining our cost. In our particular case, we handle ice, bottle coca-cola and sell coal, so it is naturally pretty hard to determine what proportion of overhead should be charged each department, but we have from experience come to believe that the best way is to throw all of our overhead charges, such as salaries of officers, office help, managers, book-keepers, traveling expenses, interest, etc., into one account and distribute on a percentage basis to costs in each department, based on sales in each department; add the percentage of overhead and you have your total cost per gallon except for depreciation; this we figure once a year and the figures-if you are actually keeping costs-will be an eye opener to many an ice cream manufacturer. It is surprising how many apparently intelligent men make an arbitrary price on their product, based on what some one else is doing instead of what they are doing and know they are doing.

Last but not least by any means: Advertising. This subject can be covered by thousands of successful illustrations, and perhaps as many failures, from a general standpoint, but advertising you must do from some standpoint. Inasmuch as I am not an advertising specialist, I will leave a full discussion of this to others. Nearly everyone you meet who advertises has some special idea as to the best way to advertise, according to their version, but the truth of the matter is I do not believe any man knows the best means, but is forced to use his own best judgment. But you must keep your name before the public if you expect to succeed. When your truck drives through the street with your sign on it, you are advertising. When you have a pile of empty or full containers around the stations you are advertising. When you write copy for bill boards or newspapers you are still advertising. So on through the almost limitless list. A few days ago I received a small circular from the Jensen Creamery Machinery Co., Oakland, Calif., and Bloomfield, N. J. This struck me forcibly as carrying home the truth to my mind, and it will no doubt apply to all of us, and for your benefit it reads as follows:

Uncle Sam says: "Boys, the campaign is over, let's get off our coats and go to work." And Uncle Sam is right. The cure for our country's evils, and they have been unreasonably magnified, lies in our agricultural and industrial progress. The unrest through which mankind has been passing is only the aftermath of war, and with us made more acute by the domestic political conflict.

Out of this tentious turmoil the people of the United States will emerge with a clear solution of their business and political troubles, and emancipation will come without disnitegration. After a storm at sea the waves are furious long aftere the sky has become serene. The crux in our country's affairs has passed, but the effects cannot immediately be dissipated. The way to achieve success is to make ready for the good times which are to come. Be an optimist. Prepare for the good times which are to come.

INCOME TAX LAWS AND REGULATIONS FOR 1920

Important Rulings Recently Adopted By the Bureau of Internal Revenue Governing Returns of the Merchant, Manufacturer and Business Man

Recent Treasury decisions affect materially returns of income taxes which will be made by business men for the year 1920. Among the more important is the decision in relation to valuations of inventories, in accordance with which a tax-payer may, regardless of his past practice, adopt the basis of "cost or market, whichever is lower," for his 1920 inventory. In his return the taxpayer must state that it represents a change from his former basis. Thereafter, changes can be made only after permission is obtained from the Commissioner of Internal Revenue.

In the case of a merchant "cost" means the invoice price less trade or other discounts excepting strictly cash discounts approximating a fair rate of interest, which may be deducted or not at the option of the taxpayer, providing a consistent course is followed. To the net invoice price should be added the cost of transportation and other necessary charges incurred in acquiring nossession of the roods.

In the case of a manufacturer "cost" means the cost of faw materials, and supplies, expenditures for labor and indirect costs incident to production, including a reasonable proportion of management expenses, but not including any cost of selling or securing return on capital.

"Market" means the current bid price prevailing at the date of the inventory for the particular merchandise. The burden of proof as to the correctness of the price rests upon the taxpaver in each case, Where no open market quotations are available, the taxpayer must use such evidence of a fair market price at the dates nearest the inventory as may be available, such as specific transactions, or compensation paid for cancellation of contracts or purchase commitments. Where, because of abnormal conditions, the taxpayer has regularly sold such merchandise at prices lower than the market bid price, the inventory may be valued at such prices. The correctness of the prices will be determined by reference to the actual sales of the taxpayer for a reasonable period before and after the date of inventory. Prices which vary materially from the actual prices so ascertained will not be accepted as reflecting the market. In such instances, the penalties prescribed for filing false and fraudulent returns-a fine of not more than \$10,000 or one year's imprisonment or both, together with the cost of prosecution and an added assessment of 50 per cent, of the tax-may be asserted.

The value of each item in the inventory may be measured by cost or market, whichever is lower. An entire stock may not be inventoried at cost and also at market price, and the lower of the two inventories used. Inventories on whatever basis taken will be subject to investigation by the Commissioner of Internal Revenue, and the taxpayer must satisfy the Commissioner of the correctness of the prices adopted. He must be prepared to show both the cost and the market price of each article included in the inventory.

Business enterprise for the purposes of the income tax, may be divided into three classes; those engaged in making, those engaged in producing, and those cugaged in trading. To these may be added another class which neither produce, make nor trade, but retuder what may be designated as business services, such as transportation, storage, livery and garage service, in which case the gross income would be the total amount received or earned.

In mercantile accounting the gross profit for a given period is obtained from a group of accounts known as trading accounts, consisting of inventory, purchases, sales, freight, returns, and allowances, and in certain cases discount and freight charges outward. Discount should be charged or credited to the distribution accounts of the business. Freight outward should be considered a selling expense.

There are three elements which enter into the cost of a manufactured product, cost of material, cost of labor, and manufacturing expense, sometimes called overhead. The first and second elements go to make up the prime cost of manufacturing. Gross income in such business means total sales less the prime cost of goods sold. Treasury regulations provide that in determining gross income subtractions should not be made for depreciation, depletion, selling expenses, or losses, or for items not ordinarily used in computing the cost of goods solt products.

The Revenue Act provides for the deduction of business expenses. Among the items to be treated as business expenses are material, labor, supplies and repairs in the case of a manufacturer, while a merchant would include his purchase of goods bought for resale. In either case the amount to be taken as a deduction for the year 1920 should be determined by taking into consideration the inventory at the beginning and end of the year. Other items that may be included as business expenses are reasonable compensation for the services of officials and employees, advertising, and other selling expenses, together with insurance premiums against fire, storm, theft, accident or other similar losses, and rental for the use of business property.

A taxpayer may deduct the necessary expenses paid in carrying on his business from the gross income from whatever source. In computing net income upon which the tax is assessed, a deduction for business expense or a disbursement or charge must have certain qualities in order to be allowed. It must relate to a trade, business, profession, or vocation, "carried on" by the taxpayer in which he has invested time and money for the purpose of a livelihood or profit. A business is being carried on by its owner, even though all its activities may be conducted by employees.

The deduction must be a "business expense" and not an "investment of capital." Amounts expended for the erection of new buildings, installation of machinery and the purchase of tools or implements of permanent value do not constitute business expenses, being merely a change in the form of capital and not a reduction of wealth. Expenditure for property which is used up in the course of the year may be deducted as a business expense.

Many representatives of business houses will be benefited by a recent Treasury decision relative to traveling expenses. Reasonable and necessary traveling expenses include railroad fares, meals and lodging. A traveling man, working on a salary without reimbursement for traveling expenses, or employed on a commission basis with no expense allowance may deduct his expenses for railroad fare, and also his expenses for meals and lodging in an amount in excess of the ordinary cost for such living expenses when at home. If he receives a salary and is repaid his actual traveling expenses, he must include as gross income an amount equal to the ordinary expense for meals and lodging when at home, as such amount is held to be additional compensation to the taxpayer.

Numerous errors relative to claims for deductions for losses bave been discovered in returns of prior years. To be allowed, deductions for losses must be confined to the following classes: Losses sustained in trade or business; losses sustained in transactions entered into for profit though not connected with a trade or business; losses sustained of property not connected with trade or business if arising from fires, shipwreck, storms, or other casualty, or from theft. To the extent any of the above losses are compensated for by insurance or otherwise, they are not deductible.

A common loss of a person engaged in business is the destruction or -theft of merchandise. A merchant who uses inventories to ascertain his profit should not make on his books entries for any of his stock in trade that is destroyed or stolen, for the reason that such loss will be reflected in his closing inventory. If his books are kept on a cash basis which properly shows his correct profits, he may deduct specifically the amount of his loss. In either event, if the merchant receives insurance for such losses, he must include in his gross income the amount of such insurance.

Loss of eash by burglary or embezzlement may be deducted by an entry debiting profit and loss and crediting eash. The amount of such loss should be reduced by the amount of insurance covering it and by the reasonable value of any claim against the embezzler or his sureties which have an ascertain-able value such as a claim against the surety company. A loss incurred through embezzlement is an allowable deduction from gross income only for the year in which the embezzlement occurred.

Bad debts form an important item in the returns of many business men. Claims for such deductions must have certain qualities. The debt must have been charged off within the year in which its worthlessness was discovered; the return must show evidence of the manner in which discovery was made; a statement should be made that the debtor has been discharged in hankruptcy or has disappeared leaving

no trace, or that the ordinary means of collection have been exhausted.

Where the creditor continues to extend credit a debt may not be claimed as worthless. A debt may not be charged off or deducted in part, but must be wholly worthless before any part can be deducted, though it may be clearly worth less than the face amount. If a debt is forgiven, it cannot be deducted because it is then regarded as a gift.

The Revenue Act provides in relation to deductions that a reasonable allowance may be made for the exhaustion, wear and tear of business property. This applies to buildings and equipment, such as motor trucks, horses, delivery wagons, or machinery,

Return of individual income if the net income was \$5,000 or less must be made on Form 1040A. If the individual net income exceeded \$5,000 the return must be made on Form 1040. If the business is operated by a partnership a return must be made on Form 1065, even though the firm had no net income for the year.

Partnerships as such are not subject to the income tax, but individual members are taxed on the distributive shares of net income from the business, whether distributed or not, and are required to include such shares in their individual return, even though they may not have been actually received. Similarly, if a business is incorporated a return must be made on Form 1120, regardless of its net income.

Forms for making corporation, partnership, and individual tax returns are now available at offices of collectors of internal revenue. Copies will be mailed by collectors to persons who filed these returns last year. Failure to receive a copy, however, does not relieve a taxpayer of his obligation to file a return on time. The period for filing is from January 1 to March 15, 1921. This year as last the tax may be paid in full at the time of filing the return or in four equal installments due on or before March 15. June 15, September 15 and December 15. The return must be filed with the collector of internal revenue for the district in which the taxpayer resides, or has his principal place of business. Heavy penalties are provided by the revenue act for failure or willful refusal to file a return and pay the tax on

PROPERLY LOADING TRUCKS

The proper loading of motor trucks requires a knowledge of the effect of the strain of the load on the body and frame of the truck. If the load is so placed that it will rest mainly on the rear trucks this strain will be relieved Most drivers know of this but they do not carry it out.

One shipping manager painted two broad white lines, on the floor and on the inside of each truck, about two and one-half feet in front and behind a point directly over the rear aske. This was the area to place the heaviest part of the load. They are plain enough to be seen by anyone who is loading the truck.

The constant reminder of these lines enable the drivers to arrange the heaviest parts of their loads accordingly.

METHODS OF MANUFACTURING ICE CREAM*

An Informal Bulletin Prepared to Assist Ice Cream Manufacturers Making from 100 to 200 Gallons Per Day

By O. E. Williams

Dairy Manufacturing Specialist, U. S. Denartment of Agriculture

The following is a brief description of the methods used in factories that are furnished with steam and mechanical refrigeration, and where the quantity of \Implication of Milk Products, Especially Ice Cream." ice cream made ranges from 100 to 200 gallons per Reprint No. 430, U. S. Public Health Service. The day.

The equipment and ingredients commonly found in a factory of this character may be listed as follows .

EQUIPMENT.

Boiler and engine.

Mechanical refrigerating plant.

Two 40-quart brine freezers (motor or belt driven).

Lee crusher (motor or belt driven).

Pasteuriser (motor or belt driven).

Mixing van (motor or belt driven).

Cooler. Ice cream cans and tubs for about 300 gallons. Milk Cans (5 and 10 gallon sizes) for about 250 gallons of

Refrigerator and hardening box. Platform scales. Steam centrifuge.

ream scales, est bottles (for milk and cream). Test bottles Acidity tester.

Sugar scales. Wash sink and steam sterilizer. Miscellaneous.

THERMOTERYS Raw cream. Milk (whole and skim). Milk (whole and skim).
Sweetened condensed skim milk.
Sweetened condensed whole milk.
Granulated sugar.
Powdered gelatin.
Extracts and canned fruits. Extracts and canned : Miscellaneous supplies.

The operations in a factory of this character may be divided into six parts, viz.; receiving and testing milk and cream: pasteurizing and cooling: preparing the mix; whipping; hardening; and cleaning.

Receiving and testing milk and cream. In factories of this size the milk anl cream are frequently purchased from a number of different sources. This necessitates making many separate weighings, and requires careful attention in examining each lot and taking samples. The cream is sometimes purchased from farmers on the butterfat basis, and sometimes from creameries and milk dealers; but in either case the cream should always be weighed and tested to determine its value. The milk is more commonly bought on the gallon basis, and this may not require weighing in every instance, but it is customary to examine the milk occasionally for fat and solids not fat, to see whether or not it contains the normal amount or is adulterated. For particulars concerning the testing see U. S. Department of Agriculture publication A-12, entitled "Chemical Testing of Milk and Cream."

Pasteurizing and cooling. The milk and cream are usually pasteurized as soon as possible after they are received. This is done primarily as a safeguard to health. (See "The Significance of a Pure Ice Cream Supply in Relation to Public Health." Bulletin

No. 56 of the U. S. Public Health Service, Washington, D. C., pages 269 to 273, inclusive: and "The former publication is no longer available, but it is possible that the public library has a copy. The reprint may be obtained from the Superintendent of Documents, Government Printing Office, price 5 cents per copy, stamps not accepted.)

Pasteurizng will also prevent economic losses by checking the fermentation. The methods and control of pasteurization are described, with illustrations, in Bureau of Animal Industry Circular 184, U. S. Department of Agriculture, copies of which are still available for free distribution.

Preparing the mix. First it is necessary to determine the porportions of the ingredients necessary. (See either the Dairy Division informal bulletin on "Ice Cream Formulas for the Factory," or "The Balance Method of Proportioning the Ingredients for Ice Cream and Other Frozen Products" nublished in the November, 1920, issue of the Journal of Dairy Science, a reprint of which may be obtained from the Bureau of Animal Industry, U. S. Department of Agriculture.) After the calculations have been made, the ingredients are carefully weighed and the mix is made in the mixing vat.

The sugar and condensed milk are usually put in the vat first to avoid spilling and splashing. These are followed by the milk and cream, a portion of which may be used to remove any condensed milk that may be adhering to a can or a bucket. Next the gelatin is made into a hot 10 per cent. solution and poured into the cream and sugar mix. The cream is stirred vigorously during the addition of the gelatin to prevent it from stringing.

If the viscosity of the mix is to be increased by ripening, it is cooled, if necessary, to about 40 deg. F. and held for several hours in the mixing vat, or possibly over night, if the vat is properly insulated. In case the mixing vat is not insulated, the mix is sometimes put into 10-gallon milk cans and held in the refrigerator.

Freezing and whipping. The mix is measured out as needed for whipping, usually 51/2 gallons for each 40-quart batch of ice cream, and the flavor is added at this time. Just before the mix is put into the freezer, the brine, at about 10 deg. F., is circulated through the freezer for a few minutes to chill the machine. When this has been done the freezer is carefully started, the cream mix admitted, and the whipping commenced. It will usually require about 15 minutes to complete the whipping of a 40quart batch of ice cream with the freezer operated at the normal speed and the brine at 10 deg. F. The time to stop whipping is determined by examining

^{*}Two informal bulletins for factories making from 5 to 30 gallons per day and from 30 to 50 gallons per day, re-spectively, have also been prepared by Mr. Williams— EDITOR.

the consistency of the ice cream through the peep hole of the freezer or by letting a little of the ice cream pass through the discharge. In many cases it is well to continue whipping for two or three minutes after the brine has been cut off from the freezer, to obtain the proper consistency. When the whipping is completed the ice cream is put immediately into the cans for hardening.

Hardening. The ice cream as it comes from the freezer is of a semifitud consistency and must be hardened before it is suitable for marketing. After the ice cream is taken from the freezer it is covered with parchment circles and the tops are placed on the cans. They are then placed in the hardening room, which is kept at about 0 deg. F. or lower.

Cleaning. The dirty cans, utensils, and equipment are first washed with hot water containing a sufficient amount of washing powder to remove the grease. Then they are rinsed with clean water and subjected to live steam or boiling water long enough to sterilize them. The cans are usually placed over a steam jet, and steam or hot water is turned on the equipment and small utensils by means of a steam hose. To assist in keeping the factory clean and free from had odors plenty of fresh air, sunshine, and light should be admitted.

LABOR GETS SQUARE DEAL

Irresponsible agitators who declare that labor is green on consideration by the lawmakers of America and that violence is the only method of securing justice for the worker, can be answered effectively, according to the Inter-Racial Council, by the following facts:

Laws enacted during 1919 to protect the lives and health of labor, contribute largely to the constructive movement, supported by both employers and employees, to help solve the problem of industrial unest by applying legislative methods, not as matter of sentiment, but of sound economics.

This is indicated by the adoption of workmen's compensation in four more states—Missouri, Tennessee, Alabama and North Dakota, the last named state enacting an advanced law which provides for administering the compensation insurance in an exclusive state fund. There are now only six states, and these non-industrial, and all in the South, remaining without this form of accident protection, and the states of the states of 45 states and therefore workmen's compensation has been written into the statutes of 45 states and territories in addition to the model act of the Federal government for its million civilian employees.

More than 30 states amended their compensation laws, generally along the line of more fiberal cash and medical benefits for injured workers, shorter waiting periods before the payments begin, and wider scope. Ten states raised their scale of compensation so that there are now 22 states which provide compensation for injured workers of at least 60 to 66 2-3 per cent. of their wages.

Women's hours were reduced in half in a dozen states, including an eight hour law in Utal and a nine hour limit in Massachusetts, secured after a full half century's struggle. Minimum wage laws for women and children were enacted in two additional states, North Dakota and Texas, making fourteen now in force, in addition to the District of Columbia.

Labor laws fared well last year in the courts. The United States Supreme Court upheld the women's

eight hour law and workmen's compensation law of Arizona. The Supreme Court of North Dakota upheld the new workmen's compensation law in that state, including the exchaisive state insurance fund. A Federal judge in North Carolina ruled against the new national child labor law in a cotton mill case, but a final decision has not yet been handed meanwhile the law, which applies the taxing power, is said to be enforced in all industries with the single exception of the mill in question.

A United States district court upheld an amendment to the federal judicial code, extending the protection of state workmen's compensation laws to injured longshoremen.

HOLLAND TO EXPORT SUGAR

There will be approximately 70,000 tons of white sugar available for export from Holland during the 1920-21 season, according to the American consul at Rotterdam. The latest returns of the beet-sugar crop of that country for the 1920-21 season indicate a total production of 300,000 tons as compared with a production of 150,467 tons of ordinary beet sugar and 79,402 tons of inverted white sugar, or a total of 238.692 tons for the 1919-20 season. It is anticipated that about 270,000 tons of white sugar will be secured from the 300,000-ton crop. It has been announced that 200,000 tons of the crop output will be required for domestic consumption and that this will be sold in Holland at cost price, and that not more than 20,000 tons of this amount will be permitted for use in the manufacture of confectionery.

STANDING ON CEMENT

Workers often object to standing on cement More specially during cold weather. Men dislike this and it is still more uncomfortable to women. Especially is this observed in new industrial plants

Especially is this observed in new industrial plants which being largely of fire-resisting construction are provided with concrete floors throughout.

A good way to take away the discomfort of standing on such factory floors is to lay strips of linoleum on the spots where the workers have to stand. In a number of cases this little innovation has done much towards the comfort of the employees,

REFRIGERATING ENGINEERS MEET

The eighth western meeting of The American Society of Refrigerating Engineers will be held in Chicago, Ill., on May 25 to 27, 1921, according to W. H. Ross, 154 Nassau st., New York, N. Y., secretary of the Association.

A driver who, with his team, is let by an ice to a coal company for the delivery of coal, and who receives his orders from the coal company, in case of injury while in the yards of the coal company, must, it is held in Scribner's Case, 231 Mass, 132, 120 N. E. 350, look to it for compensation under the Workmen's Compensation Act, although he remains in the general employ of the ice company, which relies on him to look after its team.

This case is annotated in 3 A.L.R. 1178, on the question of the liability, under the Compensation Statutes, of a general or special employer for compensation to an injured employee.

COLLECTION OF TAX UNDER 1918 REVENUE ACT

Statement Covering Section 630 of This Law Endeavors to Clarify a Few of the Misinterpreted Points

By T. J. O'Brien
Chief Field Inspector, Northern District of Illinois
From an address delivered at the annual convention
of the National Association of Ice Cream Manufacturers

The law imposing the tax upon sale of ice cream is contained in Section 630 of the Revenue Act of 1918 and reads as follows:

That on and after May 1, 1919, there shall be levied, assessed, collected, and paid a tax of 1 cent for each 10 cents or fraction thereof the amount tain, ice cream parlor, or other similar place of business, for drinks, commonly known as soft drinks, commonly known as soft drinks compounded or mixed at such place of business, for similar reliefs of food or drink, when any of the above are sold on or after such date for consumption in, or in proximity to such place of business.

The law regarding the tax on sales of ice cream is very specific and leaves very little room for misunderstanding or misinterpretation. The proprietor of the place of business is the person held responsible under the law for the proper collection of the tax, and it is his duty to see that the amount due the Government is collected and properly reported to the Government.

As provided in the law, each sale for 10 cents, or less, is taxed one cent and every sale over 10 cents is taxed an additional one cent for each 10 cents or fraction thereof of the sales price. The tax is upon the total amount of the price paid by the purchases. When several articles are the subject of a single sale the amount of tax is based on the total sales price As for example, one person orders three sundaes, the price of which is 15 cents apiece. If the articles were purchased separately the tax would amount to 2 cents on each article or 6 cents for the three, but as they were purchased at the same time the tax is assessed on the total purchase price of 45 cents and amounts to 5 cents. However, if the purchaser orders one 15 cent drink or ice cream, the tax is 2 cents, and if he orders, even without leaving the place of consumption of the first article, a second article for 15 cents he must pay another 2 cents, as the tax in such cases is based on each article irrespective of whether they were paid for separately or in one payment. In order to have the tax computed on the total of the purchase the articles must all be ordered or purchased at the same time.

Any place where soft drinks, sodas, etc., are sold is considered a place of lustiness under the law, except such places where soft drinks, ice cream, etc., are served as part of a meal. This means that even though the place of business is not a soda fountain or ice cream parlor but that sales of soft drinks, ice cream, etc., are made, such place of business is included in the law, except as stated before where soft drinks, ice cream, etc., is served as part of a meal. In all cases where the article is considered part of a meal the tax does not apply. However, if an article which under the law is taxable is sold separate and apart from the meal, that is the restaurant, dining

room, etc., is required to go to another place of business or another separate department of the same business to procure the article to be served, the tax does apply as under the law such sale is considered separate and apart from the meal. Also if a purchaser merely purchases a soft drink or ice cream in a restaurant, dining room, etc., without any other article of food or drink, the tax would apply even though the sale would have been except if he had ordered the article with other food or drink. In the larger hotels and dining rooms, the ice cream parlor or soda fountain is usually conducted as a separate department of the hotel, apart from the place of serving meals, and orders by patrons for ice cream are filled by this separate department. In such cases the tax applies and must be collected and reported in the usual manner. There is very little room for misunderstanding as to the place of business and the test is merely whether the ice cream parlor or soda fountain is run as a separate department apart from the place of serving meals.

The law provides that the tax shall apply where the sale is made for consumption in or in proximity to the place of business. This means that the tax applies to all articles sold for consumption at the place of business or purchased for consumption nearby. Ice cream sold and placed in a container to be carried by the purchaser to his home or other place separate and apart from the place of purchase are not taxable. However, articles purchased for local consumption, that is, on a beach or other resort in which the place of business is located are considered coming under the provision or in proximity to the place of business and are taxable.

The law provides that the tax must be paid at the time of sale by the purchaser to the vendor.

The tax must be collected by the vendor and reported to the Collector of the district in which the place of business is located in duplicate. This return must be submitted under oath on or before the last day of each month for the business done during the preceding month. In order that the Government can check the places of business to determine whether the full amount of tax collected or which should have been collected is reported, accurate records of all sales should be kept. If the sales and cash system of such place of business is not conducted in such a manner that each separate sale can be recorded, then a separate receptacle should be provided for depositing the amount of tax and the tax collected on ice cream should be kept separate from other tax collected. This is necessary in order that the tax can be verified. Where records of sales are kept these records should be kept in such a manner that they can readily be checked by an internal revenue officer and all invoices of ice cream received should

be kept by the proprietor. The larger soda fountains and ice cream parlors generally use the check system, the check either showing the purchase price and the amount of tax separately, or separate checks are issued for the price of the article and the tax. This system is very good and one that should be used wherever possible.

It is not the intention of the Government to dictate to proprietors how they are to conduct their business or the methods they should employ for recording sales, but the Government does insist that suitable records be kept of the amount of tax collected, and suitable records be kept of sales in order that the amount of tax reported may be verified against the total sales. Failure to keep suitable records and have them readily accessible for investigation may result in penalties and additional tax being assessed against the proprietor. Whatever system is used it should be such that it shows daily and monthly the amount of tax collected and the amount of the sales upon which such collections were made.

Payment may be made by cash, money order or check. However, in the case of uncertified checks such checks are received subject to the risk of the taxpayer in the event such checks are dishonored. The Government will not pay protest or other fees on such checks, and in the event they are dishonored, all expenses incident to the attempt to collect such check and the return of it through the depository bank, must be paid by the drawer of such check as such charges cannot be paid by the Government or deducted from the amount of tax due.

Failure to pay the tax when duc subjects the taxpayer to a fine of \$1,000, and if he wilfully refuses to pay or wilfully attempts to evade the tax he is liable to a fine of \$10,000 and costs and to imprisonment for one year. The same penalties apply to an officer or employee of a corporation who fails to pay or collect the tax due, or wilfully attempts to evade payment or refuse to make proper payment,

If any person fails to pay tax for which they are liable, the collector or his deputy can under the law collect such taxes with 5 per cent, additional and intcrest at the rate of 12 per cent., per annum.

The law also applies similar penaltics for failure to make proper return of fraudulent return or misrepresentation of tax due.

When a vendor overpays the tax due with one menthly return he may take credit for such overpayment against the tax due for a succeeding return. When a tax has been illegally or erroneously collected and where it is impossible or impracticable for the taxpayer to take credit, as allowed by the above, he may file a claim on Form 46, for refund of the amount so paid.

An option and not a sale contract is held effected in Hanscom v. Blanchard, 117 Me. 501, 105 Atl. 291, 3 A.L.R. 545, by an instrument which, after reciting the necessary elements of a contract of sale, concludes that in case the vendee shall fail to fulfill the agreement entered into, then the down payment shall be forfeited.

NATIONAL ASSOCIATION NOTICE

Research Laboratory

The Committee appointed to handle the abovementioned matter has been actively at work and this office is now in receipt of a communication from A. B. Gardiner, Chairman, asking that the members be requested to offer their views and suggestions in regard to the Laboratory: these views and suggestions to be formulated into a definite plan of pro-

- cedure. The Committee will consider:
- (1) THE SCOPE OF THE LABORATORY: (a) To cover plant operations,
- (b) To cover matters relating to our goods in the hands of customers.
- (c) To cooperate and collaborate with other research laboratories that have touched upon the information we are seeking; and to cooperate with the S. Bureau of Chemistry, the Laboratory of the Dairy Division, Department of Agriculture, and other public laboratories.
- To collect a library in which would be found all earlier publications relating to this line of work as published in Holland, Denmark, England, Germany, the United States and elsewhere, and to secure, and file all new publications relative thereto.

 (e) To cooperate with local Boards of Health in
- supplying them with correct and practical information for their guidance in the preparation of laws and ordinances relating to milk and ice cream.
- (2) THE HEAD OF THE LABORATORY:
 (a) It is the thought of the Committee that the man selected for head of the Laboratory should not only have a wide training in research work, but should also have such a reputation nationally that absolute confidence could be placed in his work and in his statements.
- (b) It is the further thought of the Committee that an executive secretary might be selected who would attend to all the business details of the Laboratory, leaving the head of the research work untrammeled in his labor.
- (3) LOCATION OF THE LABORATORY:
- Suggestions as to a location, the following points to be kept in mind in this connection: (a) In what city can the work of the Laboratory be carried on to secure the best results for our
- Association? (b) In what city can the work of the Laboratory be carried on to secure the best results in a national
- Suggestions along the above lines will be gratefully received, as well as any general suggestions in connection with the Laboratory that may occur to the members.

The Laboratory Committe plans to have a joint meeting at any early date with the Laboratory Committee of the International Milk Dealers' Association. Please address communications on this subject to A. B. Gardiner, 524 N. Calvert Street, Baltimore,

Membership Certificates
Our steel-engraved membership certificates will be ready for mailing within a very short time to members who have paid 1921 ducs. These certificates. beautifully engrossed with the name of the member, will be suitable for framing, and will be deserving of a conspicuous place in your office.

If you have not already paid your dues please send us a check promptly, in order that a certificate may go forward to you.

Bulletin No. 42, January 26, 1921.

Md.

THE ICE CREAM TRADE JOURNAL A practical helper for Ice Cream Manufacturers and a chronicle of trade events.

Published Monthly by THOMAS D. CUTLER 171 Madison Avenue, New York

Entered as second-class matter April 11, 1907, at the post office at New York, N. Y., under the Act of March 3, 1879.

OFFICIAL ORGAN OF
THE NATIONAL ABSOCIATION OF ICE CREAM MANUFACTURERS. THE ASSOCIATION OF ICE CREAM MANUFACTURES.
THE ASSOCIATION OF ICE CREAM MANUFACTURES OF N. Y. STATE.
THE ASSN. OF ICE CREAM MYRS, OF PERMISTRANCE.
THE INDIANA ASSOCIATION OF ICE CREAM MANUFACTURES. THE ASSOCIATION OF ICE CREAM MANUFACTURESS OF IOWA THE ASSOCIATION OF ICE CREAM MANUFACTURERS OF MARYLAND. NEW ENGLAND ASSOCIATION OF ICE CREAM MANUFACTURERS. MISSOURI ASSOCIATION OF ICE CREAM MANUFACTURES.
ICE CREAM MANUFACTURES' ASSO, OF WEST VIRGINIA.
VIRGINIA ICE CREAM MANUFACTURES' ASSOCIATION,
ARRAMAS ASSOCIATION OF ICE CREAM MANUFACTURES. THE ONIO ASSOCIATION OF ICE CREAM MANUFACTURES.
MINNESOTA ASSOCIATION OF ICE CREAM MANUFACTURESS.
ILLINOIS ASSOCIATION OF ICE CREAM MANUFACTURESS. ORTH CAROLINA ICE CREAM MANUPACTURERS' ASSOCIATION. CAMADIAN ASSOCIATION OF ICE CREAM MANUFACTURERS.

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Remlitance should be by eleck or draft or money order, made payable to Thomas D. Cntler, or by currency in regis-tered letter. Currency sent in unregistered letter will be at the sender's risk.

VOL. XVII. NEW YORK, FEBRUARY, 1921 NO. 2

Buy Early

During the convention season just ending, ice cream manufacturers have devoted a great deal of attention to

their peak-load problem. They should, therefore, the more readily accept the fact that they are not alone in having a peak-load problem and the more seriously consider-in their own interest, if for no other reason-whether they are doing their full share towards making this problem less difficult to handle.

At conventions of ice cream manufacturers, supply men have from time to time pointed out that the too common practice of holding back orders until the need for supplies becomes pressing results in a congestion that inevitably increases the cost of doing business and frequently in unavoidable delay in making deliveries. Now comes an equipment man, W. C. Davis, of the Davis-Watkins Dairymen's Mfg. Co., who though speaking for his own organization, might well be considered as speaking for all machinery and utensil manufatureers when he says:

"Ever since I can remember it has been an impossibility for us to properly take care of all the orders given to us during the spring months. All indications bear out my contention that this year is going to be no exception to the rule; in fact this year will probably be busier than other years because every time a lot of people are thrown out of

work it invariably increases demand for milk and dairy products. In no other commodities can the people of America secure a like proportion of food at so reasonable price as they can by purchasing dairy products. Conditions as they are today indicate an extra demand for dairy products and every man handling this food is going to do everything in his power to see that he handles all of this food that he possibly can. For this reason I look for an unusual flood or orders. At the present time we are in a position to make quick delivery on almost anything needed, and I believe other manufacturers in onr industry are in the same shape, but a little later when a lot of people wake up to their needs it will not be so easy to take care of them.

Just so long as men wait until they can wait no longer to place their orders, so long will there be heart-breaking experiences in securing needed equipment and supplies, and just so long will there be loss of business not due to avoidable fault of the supply man but to the purchasers needless and unwise delay in ordering. The cure for an ill that is perennial (or at any rate has been up to now) is simply this: Buy early.

UNDISTRIBUTED EARNINGS TAX

The Committee on Federal Taxation of the National Association of Credit Men, has issued a book entitled "The Undistributed Earnings Tax-a plan to tax the current year's earnings of corporations not distributed." This tax is designed to take the place of the Excess Profits Tax. Copies of this book have been sent to every member of Congress and to thousands of business men throughout the country.

The recommendations of the Committee are:

Elimination of the Excess Profits Tax.

Elimination of the Corporation Income Tax. Dividends from current earnings to be subject to the normal tax in the hands of the individual 4. Substitution of a corporation undistributed

earnings tax at graduated rates.

5. Dividends which are paid from earnings of prior years on which the corporation has paid the undistributed earnings tax, not to be considered as income to the individual shareholder. Dividends may not be paid from surplus until earnings of current year have first been used for that purpose.

Adjustment of rates of taxation on personal incomes (both normal and surtax) to meet the requirements of the budget from income taxes.

According to this committee some of the advantages of the Undistributed Earnings Tax are these:

- 1. Because it substantially equalizes taxation, it is closed to the serious objection which is directed against the Excess Profits Tax and may be directed against some of the substitutes proposed for it.
- 2. Since it is an extension of the income tax principle, it does not require the setting up of new tax machinery.
- 3. It combines with the income tax flexibility of rate.
- 4. By removing the penalty that rests on small shareholders, it will encourage the investment on the part of larger groups in shares of corporations and thus contribute to the financial and economic stability of the country.

OUERIES REPLIES COMMENTS

Computing Formula Using Butter and Powdered Milk

Computing Formula Using Butter and Powdered Milk Woodly on kindly write me of a sood mix for fee cream. Woodly on kindly write me of a sood mix for fee cream. The following is the ingredients used, and while it has a sood taset it seems to lack that ereamy food, We use 30 end taset used to be use

s to toggress above it seems to take too long for it to get hard and makes it look watery like and sticky. What will I do to prevent this and how can I make a product that will be more creamy and good looking?

and good looking?

Is the because the powder is mixed with the mix or does fresh milk and butter make a better product? If so, in what quantities and what must I do to improve the body of factory to use and how I can get away from that glassy look and stickines.

· We know of no reason why you should not be able to make an excellent ice cream using sound sweet butter for your fat and skim milk powder for your milk solids not fat, providing you are using a correct formula

Computing the solids in your formula, as submitted, we find you have 6.3 per cent, fat; 11.11 per cent. s.n.f.; 13.24 per cent. sugar; 0.63 per cent. gelatine and 31.28 per cent. T.S. You do not state if the 24 gal, of water added to the mix includes the water used in preparing the gelatine. If you use additional water for this it will bring the total solids content down to 30 per cent, or below.

We believe from inspection of the above solid content of your mix that even with a moderate overrun you will have an ice cream of poor texture which accounts for its watery appearance. The stickiness no doubt is caused by using a little bit too much gelatine content with so low a total solid content.

Another factor that might cause some of your trouble is the temperature at which you harden. If you are using a blast system, 4 to 8 degrees above is low enough, but if you are using the still air system your temperatures should be maintained at zero or below.

Complying with your request we are computing a new formula that, with a reasonable overrun should make a product devoid of the defects you state in your letter.

The solids content of this formula are as follows:

Butter fa	4														8	°C	
Milk S.N	.F.			٠											12	%	
Sugar														. :	15	5.0	
Gelatine	(So	lid)	,		٠								٠		0.5	45	
Total	Soli	ds		,			,			,		,		Ċ	35.5	%	

We would suggest that you make your calculations in pounds rather than in gallons for simplicity and convenience. For example, if you want 100 gallons of mix, take 900 pounds as your weight, including all ingredients-for it is better to find yourself a trifle over or under 100 gallons on your mix than to risk going wrong on your percentages of fat and milk solids not fat, as may easily happen when the more complicated method of proportioning ingredients is followed.

Starting with your fat, 8 per cent, you readily find that your requirement is 72 pounds. Then, assuming that your sweet butter has a fat content of 83 per cent, you find your butter requirement thus:

If your content of milk solids not fat is to be 12 per cent, your requirement is 108 pounds €900×12

- = 108) and assuming that the content of 100

milk solids not fat, in your skim powder is 94 per cent., your powder requirement is

$$108 \times 100 = 114.89$$

The sugar content is 15 per cent., which will come to 135 pounds. Take also the weight of your vanilla and your gelatine solution, say one-half of one per cent, for vanilla (4.5 lbs.) and 50 pounds for gelatine solution (5 lbs. of gelatine in 45 lbs. of water).

Adding the above weights we have:

Bulter .																86.7
Sk. Powe	le	t														114.89
Sugar .											,					135.00
Vamilla.	÷			,		ı.										4.51
Gel. Sol.						٠										50.0
																391.1

Then your clear water requirement is 900-391.14 or 508.86 ths

If you wish to make a smaller batch you can reduce each weight accordingly. Thus if you wish to make 10 gals, of mix instead of 100 gals, your butter content would be 8.67 lbs. (86.75+10=8.675), Likewise you can figure your other solids in the same proportion.

You will not that we have disregarded the small amount of fat in skim powder. We believe this is a safe rule to follow, to allow a little margin of safety on fat content when you are working close to a standard-either your own standard or one fixed by

Standardizing Condensed Milk

Standardizing Concerned assume the inpossible to get a correct test of butter fat with a Babeock serom tester with sugar, condensed, cream and milk all together as a batch? Mos is in possible to reduce or raise the butter fat in condensed ('Having 10 cans of condensed how to reduce to 3½%). By adding skim milk to reduce will it reduce the butter fat and increase the solids? Y, P, C.

There are a number of modifications of the Babcock test for cream that have been applied and used with practical success in testing ice cream, that is. plain ice cream without the addition of chocolate, fruits etc.

One of these modifications, which is known as Holm's method follows:

A mixture of equal parts of hydrochloric and 80 per cent, acetic acid is substituted for sulphuric acid. A sample of 9 grams is weighed into a milk-testing A sample of 9 grams is weigned into a mine-testing bottle, and 30 cc. of the acid mixture added. The bottle is then placed in hot water and kept there mitll the contents are well darkened but not charred. The test is completed in the usual manner. The fatreading is multiplied by 2

It is possible to reduce or increase the butter fat in condensed whole milk through standardization. However, by adding skim milk you will reduce the butter fat content and also reduce the solids not fat content of the condensed whole milk. If you wish to reduce the fat content of the condensed whole milk and maintain practically the same solids not fat, you can do so by standardizing with condensed skim milk. Again if you wish to reduce the fat content of the condensed whole milk and raise the solids not fat content the same may be accomplished by standardizing with skim milk powder.

Standardizing your condensed whole milk to 3.5 per cent, butter fat, we assumed that you are using condensed whole milk with an average composition. namely, 8 per cent, fat and 20 per cent, s.n.f. which weighs 8.95 pounds to the gallon. Ten cans, of 10 gallons each, would weigh 895 pounds. The following four standizations are carried on by the square method .

1. Having 895 pounds of condensed whole milk testing 8 per cent. fat and 20 per cent, s.n.f. to reduce to 3.5 per cent, fat by adding skim milk testing 0 per cent, fat and 9.36 per cent, s.n.f.:



Working out the above equation we find it requires 1,150.71 pounds of skim milk plus 895 pounds condensed whole milk to make 2045.71 pounds which tests 3.5 per cent, fat and 14 per cent, s.n.f.

2. Having 895 pounds of condensed whole milk testing 8 per cent, fat and 20 per cent, s.n.f. to reduce to 3.5 per cent, fat by adding condensed skim milk. 4 to 1 average composition 0.7 per cent. fat and 33 per cent. s.n.f.:



Working out the above equation we find it requires 1.438.39 pounds of condensed skim milk plus 895 pounds condensed whole milk to make 2,333.39 pounds which tests 3.5 per cent. fat and 28 per cent. s.n.f.

3. Having 895 pounds of condensed whole milk testing 8 per cent, fat and 20 per cent, s.n.f. to reduce to 3.5 per cent. by adding powdered skim milk of average composition 2 per cent. fat and 94 per cent. 5.n.f. :



Working out the above equation we find it requires 2,685 pounds of powdered skim milk plus 895 pounds condensed whole milk to make 3,580 pounds which. tests 3.5 per cent, fat and 61 per cent, s.n.f.

If you wish to make a definite quantity of your standardized product the following method is used:

4. Having condensed whole milk testing 8 per cent. fat and 20 per cent, s.n.f. and condensed skim milk testing 0.7 per cent. fat and 33 per cent. s.n.f. to make 900 pounds testing 3.5 per cent. fat:



Working out the above equation we find it requires 345.2 pounds condensed whole milk and 554.8 pounds condensed skim to make 900 pounds testing 3.5 per cent, fat and 28 per cent, s.n.f.

Increasing the Solids Not Fat

We would appreciate it very much if you will write us your opinion about the following ingredients which we are soing for each of the following ingredients which we are soing for each of the following ingredients which we are to improved and how?

The following ingredients are used: 158 pounds 46, milk of pounds 36% cream, 150 pounds eating 52 counces of vanilla and about 21% pounds water to melt gelatine in.

Are we getting too much swell or not enough swell? What is the per cent. of far and solids, and total solids, 3. L.

T A I.

Your formula is as follows:

408.0 lbs. Complete Mix

The above formula contains 9.49% butter fat, 10.92% milk solids not fat, 11.76% sugar, 0.61% gelatine (solid) and 32.78% total solids.

You state that you make as high as 93 gallons from the above mix which we figure is 106.07% overrun (The weight of your mix per gallon theoretically

figures as 9.04 lbs and - equals 45.13 gallons). 0.04

We believe this overrun is a little high for the amount of solids contained in your mix.

This formula could be improved by increasing the amount of solids, say to 34 or 35%. This can be done by making a product with the following solids content: 10% fat, 10% milk solid not fat, and 14% sugar,

ANNUAL MEETING OF CHAMBER

Joseph H. Defrees, president of the Chamber of Commerce of the United States, announced recently that the ninth annual meeting of the National Chamber will be held at Atlantic City, N. J., April 27, 28 and 29, 1921.

NEWS OF ICE CREAM FACTORIES

Readers are requested to send for this department authentic news of intention to build, improve or add equipment to plants; changes in control, and other items of interest about plants and the business.

CANADA

Sherbrooke, Que.—Goupil, Limited 7, Rue Alexandre, has enlarged its business, being incorporated for \$250,000. The company manufactures about 2000 gallons of ice cream daily, and also manufactures chocolate.

CUBA

Guantanamo Bay—A. C. Bridges, Lieutenant, U. S. N., supply officer of the U. S. Receiving Ship at Guantanamo Bay, states that he has established an ice cream plant in connection with a soda fountain on the receiving ship. The Lieutenant has just placed an order for a 40-qt. freezer and expects to make about 40 gallons a day. He wishes to get in touch with dealers of a cressories and supplies.

ALABAMA

Gadsden—C. K. Crossfield has bought the Lokey Ice Cream Co., 12th st. and Forest ave., and will operate under that name. Mr. Crossfield states that he will install additional equipment and make a few other changes.

COLORADO

Pueblo—The Pueblo Ice Cream Co., recently organized, has purchased the Sanitary Ice Cream & Supply Co. and will do business at the same address, 509 Elizabeth st. The company's plant has a capacity of I/000 gallons a day, steam and refrigeration being purchased from the Mountain Ice & Coal Co. on the gallon basis. R. J. Belcher, who was president of the Sanitary Company, is also president of the Pueblo Ice Cream Co.; however, there were a number of changes in ownership Incident to the formation of the new company.

GEORGIA

Dublim—The J. W. Geeslin Ice Cream Co. has remodeled its plant, installing new machinery and
building in a hardening room, 8 by 10 ft., and milk
room, 8 by 10 ft., constructed under the direction
of the Armstrong Cork & Insulation Co. The new
machinery includes a 6-ton York refrigerating machine, also a Viscolizer, one Reid Pasteurizer, one
Emery Thompson 40-qt. belt-driven brine freezer,
a C.-P. can washer, one Creasey ice breaker, a holding vat, Jensen turbine can dryer, tubular milk
cooler, 10 h.p. vertical boiler, a Babcock milk tester,
alf furnished by the Blanke Mfg. Co., St. Louis, Mo.
The total investment will be around \$18,000.

ILLINOIS

Bloomington—The Bloomington Ice Cream Co., 309 S. Roosevelt ave., has been purchased by L. M. Morris, who will continue the business in the same place and under the same name.

Centralia-The Kaney Ice Cream Co. plans to

make some changes in its refrigeration system and install new machinery.

Chicago-The Hydrox Co., 24th and Lake Park ave., has purchased 25 Ward electric trucks.

East St. Louis—The St. Clair Dairy Co. has installed one 26-ton vertical single-acting belt driven enclosed York refrigerating machine and high pressure side complete for its ice cream department.

McLeanshoro—The Haw Creek Creamery is building an addition to its plant and will install an ice cream plant therein. J. R. Newbery, formerly of Newton, Ill., and recently of Jonesboro, Ark., has bought an interest in the creamery.

Rockford-The Crescent Ice Cream Co., 416 E. State st., plans to install some new machinery.

INDIANA

Marion—The firm name of the Sohn Ice Cream Co. has been changed to the Atkins Products Co. Michigan City—The Sanitary Milk & Ice Cream Co. plans to remodel its plant and install new equipment.

Nappanee—George Freese's Sons, ice cream manufacturers, have added to their York refrigerating equipment a 15-ton York vertical single-acting belt driven enclosed refrigerating machine and high pressure side complete.

Warsaw-The Collins Ice Cream Co. is remodeling its plant and plans to install new equipment.

10WA

Arlington—The Hutchinson Co., Cedar Rapids, has installed a 5-ton York refrigerating machine and high side complete in its branch plant here.

Cedar Rapids—The Hutchinson Co. has started the construction of its new plant on the plot, 80 by 80 ft., recently purchased at Third st. and Fifth ave. This plant, which will be of brick and concrete construction, two story and basement, will be modern throughout and equipped with up-to-date machinery.

LOUISIANA

Hammond-O. F. Schleef, of Loranger, plans to establish an ice cream factory here.

MARYLAND

Baltimore—Work was recently started on the additions and alterations of the Maryland Creamery Co's ice cream plant at 1700 block E. Pratt st. The plans call for additional storage facilities, a large freezing room and laboratory. Additional equipment will be installed, including one 25-ton York ice machine, two 80-qt. Miller freezer and two 1000-gal. glass lined storage vats. When complete the improvements will represent a cost of \$55,000 and the plant will have a daily capacity of 5000 gal. and storage for 10,000 gal. J. Abrams, president of the company, expects the improvements will be completed about April 1, 1921.

MASSACHUSETTS

Boston—The Boston Jersey Creamery, 9-10 Fulton place, has increased its capital from \$100,000 to \$200,000.

Brockton—The Producers' Dairy Co., 725 Belmont st., is remodelling its by-product rooms into a modern ice cream department, to be completed by April All equipment will be new except a 20-ton C. P. ice machine, which has been used in the refrigeration of market milk.

Lowell-The Grove Ice Cream Co. plans to build a branch plant,

North Adams—The Trojan Ice Cream Co., of

Troy, N. Y., plans to build a branch plant here. Pittsfield—The Pittsfield Milk Exchange, a co-

Pritisheld—The Pritisheld Milk Exchange, a cooperative organization, will build a new one-story plant, 65 by 100 ft., for the manufacture of ice cream and other milk products.

Taunton-F. H. Cushman, ice cream manufacturer, is remodelling his plant at 23 Trescott st.

MINNESOTA

Fairmont—The Fairmont Ice Cream Co. is remodelling its plant. The improvement will cost \$10,000.

Faribault—The Minnestota Waterloo Creamery Co. has been incorporated with a capital stock of \$250,000 by Leroy Corliss and B. B. Corliss of Omaha, Neb., and H. L. Hobson. of this city. Leroy Corliss, president of the company, states that the new Minnestota company, at the present time, is not engaged in the ice cream business direct, although being associated in a good many ice cream plants.

MISSISSIPPI

Columbus—The Columbus Ice Cream & Creamery Co. is increasing the capacity of its plant by adding new motor driven freezers and other equipment furnished by the Creamery Package Mfg. Co.

MONTANA

Harlowton—The Harlowton Creamery Co. has been organized by E. J. Riggs and A. F. Valgamore. The new firm has leased a building which will be remodeled for the manufacture of ice cream and other dairy products. The company will also install a bottling works in the building.

MISSOURI

St. Lonis—The Southside Ice Cream Co., Carondelet, has been organized with a capital stock of about \$20,000. The company expects to be in operation this spring.

NEBRASKA

Norfolk-The Graham Ice Cream Co., of Omaha, has purchased the Norfolk Ice Cream Co. and the two companies will be operated under one administration from Omaha. Thomas Lewis and Will Lewis will remain in active management at the Norfolk plant and in addition S. S. Hamilton has been engaged as assistant manager and Thomas Walpole. as general superintendent of both plants. H. B. Graham, president of the company, states that an addition 31 by 140 ft. will be added to the Norfolk plant. The addition will be two stories high of brick and concrete construction in which the company will instal a refrigerating plant and additional cold storage rooms at a cost of \$50,000 or more. Extensive repairs will also be made to the old plant and new equipment installed, including two Elvria glass-lined vats. The purchase of the Norfolk plant also includes the ice plant formerly owned by the Pure Ice Co. A new ice plant is contemplated. The Graham Ice Cream Co. also manufactures candy,

NEW JERSEY

Trenton-The Hidebrecht Ice Cream Co. has just finished the installation of a 35-ton York ice plant.

NEW YORK

Brooklyn—The Sachter Ice Cream Co., 30 Little Nassau st., has installed two 160-qt. U. S. freezers, a No. 3 Viscolizer, two vats of 300 and 400 gal. capacity, an additional 10-ton shell type cooler and another hardening room of 300 gal. capacity.

Buffalo—The Taylor Ice Cream Co., 312 15th st., has built a new freezing room 26 by 30 ft., and installed new mixing vats and four 100-qt. freezers. The company is also installing a new direct expansion hardening room. 34 by 24 ft., and a 9 by 9 Frick refrigerating machine.

Clayton—The Clayton Ice Cream Co. has installed one new Perfection freezer and a 6-ton shell type brine cooler inside plant. The company has also added two new Reo delivery trucks to its delivery equipment.

Gloversville—The Abdella Ice Cream Co. has been incorporated with a capital stock of \$35,000 by S. M. Simon, M. K. and G. Abdella. The new company will probably instal its ice cream plant at 12 Church st.

Norwicl:—The Norwich Ice Cream Co. is reported to be planning to build a new plant in the near future.

Ogdensburg—The Gouverneur Ice Cream Co., the Norwood Ice Cream Co. and the Community Ice Cream Co. have been consolidated into one company, which will be known as the St. Lawrence Ice Cream Co. Its capital stock will be \$100,000.

NORTH CAROLINA

Lexington—The Grimes Ice Cream Co. is building a new plant, 36 by 80 ft., two floors. The company will install additional new machinery to bring its daily capacity to 500 gallons. The plans of the building were furnished by the Creamery Package Mfg. Co.

OHIO

Dover—K. F. Stuhlmiller has installed a 2-ton Young friedly for the frigerating machine in his ice cream factory. Findlay—The Findlay Dairy Co. is remodeling its ice cream plant, removing the freezers to a separate room newly built for the purpose and installing a gravity feed from the mix tank to the freezers.

Portsmouth—The Ice Cream and Bottling Co. has increased its capital stock from \$25,000 to \$50,000

Ravenna—The Ravenna Milk & Ice Co., recently incorporated with a capital stock of \$100,000, has just opened its new plant, 150 by 170 ft., for the manufacture of ice cream, ice, butter and other dairy products.

Washington C, H.—The Sunlight Creameries plan to install two new vats and other equipment.

Zanesville—The Flowers Ice Cream Co. has been purchased by the Crane-Ohio Ice Cream Co. of Columbus.

OKLAHOMA

Oklahoma City-The New State Ice Co. has in-

stalled a 25-ton vertical York refrigerating machine and high pressure side complete.

Okmulgee—The Lindsay Ice Cream Co. is reported to be planning the erection of a new plant in the near future.

OREGON

Eugene—The Eugene Farmers Creamery is considering plans for the erection of a milk powder and ice cream plant to cost about \$75,000.

PENNSVLVANIA

Carlisle—Christman Brothers have installed in their ice cream and ice plant at 68 E. Pomfret st., one 20-ton vertical York refrigerating machine and high pressure side complete, also a 12-ton low pressure air raw water flooded freezing system.

Oil City—Moore Bros. are now located in their new ice cream factory at 8 E. First st. The new plant has an annual capacity of 250,000 gallons.

Philadelphia—The Colonial Ice Cream Co. is erecting a new cooling tower on its plant at 4th and Poplar sts.

State College-Paul J. Smith has purchased T. E. Saner's ice cream factory.

SOUTH CAROLINA

Darlington—George Metropol has installed in his ice cream factory one 6-ton vertical York refrigerating machine.

Greenville—The Garrison Ice Cream Co. is increasing its capacity by adding a new 1,000 gal, storage room and installing additional equipment, including a new freezer and 15-ton refrigerating machine.

Sumter—H. G. Metropol, ice cream manufacturer, has increased the capacity of his refrigerating system by the installation of a 12-ton York vertical refrigerating machine.

TENNESSEE

Chattanooga—The George K. Brown Ice Cream Co. is making alterations in its plant and installing new machinery and equipment.

TEXAS

Dallas—The Crystal Ice Cream Co., 1100 Canton st., has installed one 12 in. by 7 ft. York vertical ammonia drier-cooler-parifier.

Dallas—Marshall Brothers are building a new ice cream factory at 613 Kentucky st, with a hardening room capacity of 4,000 gallons. The refrigerating plant will be installed by the Frick Co. and the ice cream machinery and equipment by the Davis Watkins Dairymen's Mfg. Co. The cost of the building now under construction is approximately \$25,000 and the cost of machinery and equipment about \$60,000 and in addition to this \$20,000 will be expended for delivery equipment.

WISCONSIN

Medford—Win Suits, a druggist, recently purchased full equipment for the manufacture of ice cream for the wholesale trade and will install same in his store. Mr. Suits plans to build a modern ice cream plant next summer.

Milwankee—The Blommer Ice Cream Co., North ave. and 15th st., has bids out for complete equipment for 50-ton additional refrigerating capacity.

THE STUDY COLUMN

The questions here asked are based on statements contained in the issue of last month. The reference may be found in an article, or possibly an editorial, but it is there. Can you answer these questions?

- What was the recent ruling of the Interstate Commerce Commission regarding the double tagging of packers?
- Discuss the advantages to the ice cream industry of applying mechanical refrigeration to delivery trucks and soda fountains.
- Name seven factors pertaining to the successful return of ice cream packers.
- 4. Discuss the advantages of the National Association's proposed laboratory,
- 5. What are a number of benefits derived from frequent sectional meetings of state associations?
- Discuss the packing problem for the small city.
 How will the coking of bituminous coal near the
- mines facilitate the present power problem?

 8. What other ways can the efficiency of the
- country's power be conservatively increased?

 9. Discuss the transportation situation in the
- United States.

 10. Name a number of ways a dealer may be coached in selling ice cream.
- 11. What are the advantages of keeping records of delivery costs?
 - 12. What is the "Right Way Plan"?
- 13. What amount was reported paid for soft drinks in the past eleven months by consumers?
- 14. Discuss the Revenue Department's recent income tax ruling regarding inventories.
 - 15. What is the real meaning of competition?
- 16. Which is the more accurate of the two methods of purchasing milk—"by weight" or "by meas-
- 17. What is the approximate number of conesconsumed in the United States in a normal year?

COST OF LIVING ANALYZED

The results of an analysis of the course of living costs during the period from June 1, 1914, to December 31, 1920, in thirty-two cities have been made public by the Department of Labor. The figures include cost of food, which is taken as representing 42 per cent. of essential expenditure of the family; clothing, 16.6 per cent, of expenditure; housing, 14.3 per cent.; fuel and light, 4.3 per cent.; furniture and furnishings, 3.3 per cent., and miscellaneous, 18.7 per cent. The analysis shows that after a continuing increase in the cost of almost every necessity of life from June 1, 1914, until June, 1920, a break came during the last six months of 1920, no decrease. however, occurring in the cost of housing, fuel and light. During these six months housing showed an , increase of 5.7 per cent., and fuel and light, 26.4 per cent. For the entire period of six years and a half the heaviest increases were in the prices of clothing and furniture and furnishings. Detroit, Michigan, leads all cities in the rise of living costs, the increase there being computed at 136 per cent. up to last June. On December 31, last, living costs there had dropped to 118.6 per cent, above the level in June, 1914.

NEWS OF THE EQUIPMENT AND SUPPLY FIELD

New Ice Cream Dispenser

Robert Ferris, 2114 Fremont ave., S., Minneapolis, Minn., has patented an apparatus for dispensing ice cream in paper cartons. According to patent No. 1.354,-246 the new device is an apparatus for dispensing ice cream or other materials in paper cartons formed at the time needed for use, and which apparatus comprises a cup-shaped former on which the paper may be rolled and gainst the base of which its lower ends are adapted to be folded to produce a carton of cup-like shape, and a carton holder comprising an expansible and contractible approximately cylindrical shell, and a non-expansible shell container which, when applied around said shell, limits the expansion of said shell to such size that its interior is of but slightly greater diameter than the exterior of said former.

The H. A. Johnson Co., 221 State st., Boston, Mass, recently held a meeting of its stockholders and directors at which the following officers were elected: President, Edwin C. Johnson to succeed his father Henry A. Johnson, who passed away on Dee, 12 last; vice-president. Clarence Newton, attorney for the firm, and treasurer, Frank R. Kimball, who has for several years been treasurer of the company. The board of directors is composed of E. C. Johnson, C. L. Newton and T. Frank Harrington, the last named being head salesman for the firm.

Frederick C. Mathews Co., 685 Mullett st., Detroit, Mich., recently engaged J. E. Scott as its special representative covering New England, New Jersey and New York State.

The Miller Pasteurizing Machine Co., Canton, Oho, has changed its firm name to The H. H. Miller Industries Co. The company announces that there will be no re-organization, the stockholders remaining the same as they were in the Miller Pasteurizing Machine Co. and that the management of the business is exactly the same as it was heretofore, i. c., H. H. Miller, president and general manager and M. E. Miller, secretary and treasurer. It is the intention of the company to conduct the business under the same lines manufacturing Miller ice cream freezers, dairy machinery, etc.

Fred E. Eriksen, at one time advertising manager of the Creamery Package Mfg. Co., Chicago, and for the past three years advertising manager of The Olsen Publishing Co., Milwaukee, Wis., is now conducting a special advertising service for manufacturers of equipment and supplies for the dairy industry. He is located at 606 Matthews Bldg., Milwaukee, Wis.

The John Wood Manufacturing Co., of Conshohocken, Penna., announce that its ice cream can department is now operating again. Some months ago the company suffered losses by fire but the department has been rebuilt and new machinery installed for the manufacture of the company's Electric Weld type of ice cream can.

The address of the Boston office of the United Cork Companies, Lyndhurst, N. J., has been changed from 88 Broad st. to 268-74 State st., Boston, Mass.

Ayer & McKinney has moved from 41 S. Front st. to 39 S. Water st., Philadelphia, Pa.

The Manton Gaulin Mfg. Co. recently moved from 268 State st. to 11 Elkins st., Boston, Mass.

The Blanke-Baer Extract & Preserving Co. has moved into its new building at 3224 S. Kinghighway, St. Louis, Mo.

Benjamin Holland, 1112 Western ave. Seattle, Wash, recently announced that he is organizing a new company to be known as Benjamin Holland & Co. The new firm will be importers and manufacturers of specialties for the manufacturing confectioners, ice cream manufacturers, soda fountains and bakers.

The Maas Carbonator Co., 2218 Clybourn st., Milwaukee, Wis., has engaged H. E. Hartstein to cover its sales field through personal representation.

WEIGHT CHANGES NOT APPROVED

According to a telegram received recently by C. S. Hoskins, traffic manager for the Tampa Board of Trade, the Florida Railroad Commissioners have declined to approve the increase of weights ordered by the Federal commission in docket 11416 on certain special commodities.

By the terms of the express classifications, amended Feb. 4, the estimated weight is ordered increased on five-gallon ice cream packages from 100 to 115 pounds, following the I. C. C. order, docket No. 11416, actual test weight being 145 to 175 pounds. Tampa, St. Petersburg and Orlando ice cream manufacturers claim that packages shipped by them average not over 100 pounds, and allege that the increased weight classification is not justified in local movement.

Traffic Manager Hoskins asked the Florida Railroad Commission to entertain a petition for suspension of classification, as to Florida interstate traffic, pending a hearing, this request being wired to the railroad commission at Tallahassee recently, and a reply as follows received:

Your wire received relative ice cream packages by express. Florida commission has declined approve for intrastate application any of the changes authorized by the Federal commission in docket No. 11416. (Signet) Florida Railroad Commission.— Tampa (Fla.) Tribune.

WANTS, FOR SALE, ETC.

Advertisements under this head, six ceats a word such insertion, classification head and address not to be counted. Minimum charge \$1.00. Remissarce Must Accompany Order. Hilp and situation want ade will be given one insertion free.

- SITUATION WAVEED—By practical ice cream maker familiar with all modern machinery used in manufacture of ice cream; can handle help; have had years of experience in all branches of business and am capable of handling high clinic condition physically. Address O. S., care THE ICE CREAM TRADE JOUNNAL.
- SITUATION WANTED—As factory superintendent by capable man with practical experience in a modern ice eream factory. Fully understands the different branches of the business. Address Capable, care The Ice Cream Trade Journal
- SITUATION WANTED—An experienced ice cream salesman desires a position with a progressive concern. Have had three years' experience with record of results. Address Salesman, care The Ice Caram Tanor JOURNAL.
- SITUATION WANTED—Manager or superintendent of ice cream plant. Fourteen years' experience in all things pertaining solids, bomogenizing, pasteurizing, refrigeration, buying and selling. Prefer the West, Address C. M., care The Ice CREAM TRADE JOENNAL.
- SITUATION WANTED—By dairy chemist familiar with all modern methods of testing, standardizing and sanitary control. Can give references. Address U. V., care THE ICE CREAM TRADE JOURNAL.
- SITUATION WANTED—Sales-engineer as representative for dairy and ice cream manufacturers' equipment in Greater New York and New Jersey. Address A. E. C., care The ICE CREAM TRADE JOURNAL,
- SITUATION WANTED—As superintendent or as assistant manager of an ice cream plant. Fourteen years' experience. Can handle practically any ice cream proposition. Address W. B. McLellan, General Delivery, Portland, Ore.
- SITUATION WANTED—As chemist, managerial ability, age 30, now chief chemist in large condensery, first-class chemist and Mojonnier operator, desires to get in ice cream. Knows testing of milk and its by-products thoroughly Address Chemist, care Title Ite Cream Trade JOURNAL
- STIUATION WANTED—By young experienced ice cream maker thoroughly familiar with modern methods and machinery; dairy school graduate; not atraid to work; will go anywhere: good references. State particulars and salary. Address L. C. W., care The Ice CREAM TRADE JOLENAL.
- SITUATION WATER-As manager or sasistum manager by an account young married man with practical training in a modern ice cream factory, including selling, shipping and manufacturing. Familiar with motor trucks, pasterizers, homogenizers, refrigeration, etc. Address Progressive, care The Lex Casam Tanage JouanaL.
 - SITUATION WANTED—As manager of large ice cream business. Wide experience in manufacture, handling and sales. Address D. M., care THE Ice CREAM TRADE JOURNAL.
- SITUATION WANTED—Position as foreman in ice cream factory.

 Have had 4 years' experience as ice cream maker and foreman. Address O. G., care The Ice Cream Trade Lournal
- SITUATION WANTEN—First class ice cream man with 21 years' experience and best of effectiones wishes situation as present employed but wishes to change, Prefer to locate in eastern states. Address East, care The Ice Cream Trade Journal.
- SITUATION WANTED—As foreman or superintendent by a first class icc creem and dirir min with B years' experience and plain creems; also can handle all up-to-date machinery in either line. Married and can furnish best of references, Address O, Wallace, 72 S. Adams St., Green Bay, Wis.
- SITUATION WANTED—As he cream maker. Have had it years' experience in both plain and laney cream, isee and sherbets of all kinds. Understand the running of more driven brine freezers, pasteurizer, homogenizer and Viscolika of Labor with results. Address A. R., care The Irec Cream Trade Journal.
- Sirvation Wanter-By young man with technical and prac-

- Familiar with all kinds of dairy and refrigerating machinery. Competent worker and manager, Address L. D. B., care The Ice Cream Trade Journal.
- HELP WANTED—First-class ice cream maker and plant foreman to handle new plant in one of the largest of the southwestern clies. Must have references; permanent attuation. Willing to pay good salary to the right man. Marshall Brothers, 613 Kentucky st., Dallas, Teas.
- HELP WANTED-Experienced ice cream maker who can invest from \$2000 to \$4000. Grand chance to get into a business of your own. Address E. H., care THE ICE CREAM TRADE JOURNAL.
- HELF WAYED—Progressive ice cream maker who understands calculation of fats and solids and standardization to take the control of the control of the control of the control I he makes good he will be made superintendent. Will pay \$150 per month to start, Address N. W., care The I'ce Cesan Tand FORNAL.
- HELP WANTED—First-class man capable of taking charge of refrigeration and ice making plant in ice cream plant. State experience and reference. Leichtman Ice Cream Co., 226 East Green St., Hazleton, Pa.
- HELP WANTED-Experienced ice cream maker. For particulars address the Renfrew Creamery Co., Ltd., Renfrew, Ontario.
- HELP WANTED—First class man who understands the manifacture and testing of ice cream mixed by modern methods. Must understand using of awest botter, milk powder, etc., and turn out uniform and marketable products; also the use of Viscolizer. This position offers a good future for the right man. Address M. P., care Tina Ice Chana Traobe
- HELP WANTED—Man with two or more years' experience at pasteurizing, able to bandle Viscolizer. A future for the right man who is willing to work hard to attain that end. References required. Address B. A. R., care The Ice Caram Takog Joubnal.
- Halp Wanted—A first-class ice cream maker for a small plant. Must turn out first class goods, Strictly wholesale business and the position is permanent throughout the year. Will pay a liberal salary for a good man. Owensboro Bread and Ice Cream Co., Owensboro, Ky.
- HELP WANTED—First class see cream maker wanted for modern see cream and milk plant; have latest equipment. An elegant opportunity for a live wire. State age, married or single; references and salary desired in first letter. Address Bennett'a Creamery, Nelsonville, Ohio.
- Iliza Waxtzo-Fareman to take charge of amail plant in south. Must be an honest and reliable worter, one who can turn out a first class ice cream and understands all up to date machinery. Prefer one with experience in refrigeration as we have ice plant in connection. Address B. N. C., care The Ice Cream Trade Journal.
- SALESMAN WANTED—High class sales representative with selling and engineering ability and it possible some knowledge machinery amount of the properties of th
- SALESMAN WANTED—Calling on ice cream and milk companies to handle our product as sideline. Quick sales; good commissions. Address P. J., care The Ice CREAM TRADE JOURNAL.
- FOR SALE OS RENT-Two-story, cement block ice cream factory, 50x100, elevator and cold storage room, railroad frontage and siding, at Babylon, Long Island, N. V., 39 miles Irom New York City. Address P. O. Box 306, Babylon, N. Y.
- Foa Sale-Homogenizer in good working condition, 90 gal. per bour capacity. Priced to sell quick. Address Patton Creamery Company, Springfield, Mo.
- Foa SALE—Going ice cream manufacturing plant, enjoying large and lucrative trade in industrial city of 40,000, to settle estate of deceased owner. Address J. Fred Katzmisier, Attorney, Williamsport, Penna.
 Foa SALE—Manton-fastin homogenizer, 60-90 gal. per hour,
 - Foa Sale-Manton-Laulin homogenizer, 60-90 gal. per hour, in first-class, serviceable condition. Price \$400.00 cash, f.o.b., Bloomington, Ill. Snow & Palmer Co., Bloomington, Ill.
- Foa SALE—Two 200 gallon Miller and 150 gallon Emery Thompson cream mixers. Good condition. Write for particulars. U. S. Freezer & Machine Corp., 270 Union Ave. Brooklyn, N. Y.
- For Sale-Second hand 200-gallon Progress homogenizer complete with 3 phase, 60 cycle, 220 volt, 10 h p. motor

and chain drive. Used two scasons and guaranteed same as new. Royalty paid. Bargain. Address S. T., care Tha ICE CREAM TRADE JOURNAL.

For Sale—Two horizontal Emery Thompson ice cream frecerers, belt drive, used but hittle, one 50 gallon Elyria glass lined tank, one 1½a1½ in. centrifugal belt driven brine pump. Coon Ice Cream Co., Burlington, Vt.

Fos Sala—One 600-gallon Reid second-hand vat, steel body, equipped with motor drive. Specifications 2 phase, 60 cycle, 220 volt A. C. Price \$700 cash. Address P. A. R., care Tha Ics Caram Tade Journal.

a SALE-Two hundred gallon homogenizer. Address smith & Clark Co., Water and Tannery sts., Wilkes-Barre,

For SALE—Three Emery Thompson upright freezers, one helt driven, other two motor driven, 60 cycle, 2 phase valle without motor. All machines in good condition and for sale cheap. Binghamton Ice Cream Co., Binghamton, N.

For Sale-Two thousand pound capacity tubular cooler. Rich Ice Cream Co., Buffalo, N. Y.

Foa Sale—Three 40 qt. Miller motor driven freezers, 220 volts, 3 phase, 60 cycle. Now in use, good condition, Submit bid for one or all. Union Ice Cream Co., Nashville, Tenn.

FOR SALE—Having closed our plant we offer subject to prior sale one 150 h. p. water tube holler, heavy steel stacks for

\$1,500.00, belier uump 6.44ac; Union pump \$100.00, water to holose of the \$5.00 to \$10,000 to \$10,0

Foa Sale—One horizontal steam boiler 20 h. p., one Hor steam engine, one steam pump, lot of fixtures, all in Al condition, lot of sheet and granulated eork or will exchange for see cream machinery. Lewis Bros., Parksley, Va.

Foa Sata—Ice cream and butter manufacturing plant, lo-cated in a good town of 20,000 population, plant equipped with one dron retingerating machine, cold storage, lauden good, ice tank, etc. The is an Al proposition; write for particulars. Dupon B. Lyon, Sherman, France

For Salz-Six new Cherry Model "1" 60 qt. freezers, two Tyson 40 qt. and one Miller 40 qt, freezers, all motor driven. Rich Ice Cream Co., Buffalo, N. Y.

Fos Sala—Immediate shipment on ice making plant consisting of new ice tank, made of steel, complete with 115:300 lb ice making cans, frame and covers and insulation, hrand new one year ago, 7 x 14 H, & C. belt driven compressor with many small machines and equipment. W. C. Hardy, 1215 Filbert st., Philadelphia, 2016.

For SALE-Three 40 qt, upright C. & B. improved freezes, complete with copper cans, good condition, cheap. Also

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500-5 gallon tubs newly repaired and painted \$3.00 each. The Hutchinson Co., Cedar Rapids, Iowa.

For Sale—Only ice cream plant in city of twenty thousand. Wonderful opportunity. Price very low. Nearest plant two hundred miles distant. C. L. Cliff, 121 Lumber st., Savannah, Ga.

For Satt—One new 40-gallon Sharpless centrifugal emules, including stand, Chilly King cooler with stand, niving take, brine tank and pump, fittings and connections, conjepted Velt pulleys; 1 h.p., motor required. Price 3175,000 One new cedar ice cream tub. 10 gallon, best offer. Address Aviston Bank, Aviston, Illinois.

WANTED TO BUY-Emery Thompson or Champion brine teccream freezer, motor or belt, 40-qt. Address Freezer, eare The Ice Cream Trade Journal.

WANTRO TO BUY-Ice cream plant. Any plant making under 100,000 gallons per year not considered. Will build plant if we can find good location. Address W. M., care The Ice Cream Trade Journal.

Wanted to Buy or Lease—Fully equipped ice cream plant. Good condition. Must do at least fifty thousand gallons yearly business. H. C. Dodson, Valley Park, Mo.

CATALOGUES, ETC.

The Cherry-Bassett Co., of Baltimore and Philadephia, just published a new 300 page eatalog entitled "Ice Cream Equipment." It is a very complete edition, containing tractically everything needed by either the ice cream manufacturer, dealer and sods fountain proprietor.

C. E. Phenicic, 111 E. 34th st., Tacoma, Wash., recently published an illustrated booklet entitled "1921 Ice Cream Cabinets Refrigerant Boxes, Brick Cutters, Refrigerators."

Jos. S. Lovering Whatton, 1123 N. 310, st., Philadelphia, P. has published Cord Epimerical Burnerical and all statements of the provided section of the provided sections, in the statement of the provided sections, and explains methods of operating the breaking illustrates and explains methods of operating the breaking illustrates and explains methods of operating the breaking illustrates and explains methods of operating the breaking and provided and the provided sections are sections regarding the regulation of the size of the broken tee, the amount of power required, etc.

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Guaranteed Rebuilt Used Equipment at Bargain Prices

AT DATASIN FIRCE

5.000 3-ral, new raised bottom cans with lids, \$1.25
each; 2 560-ral, motor drive Wizard vats, vitride,
white enameled Jackets, motor drive, \$500-each;
also 1, 2, 3 and 400-ral, bett and motor drive vats;
1 and 240-ral, batch mirces; PS. Atkinson bott and
1 and 240-ral, batch mirces; PS. Atkinson bott and
of various makes; Miller, Miller-Tysen, Thompson,
1550 and up; Jakaka 2,040-pound cooler complete,
4-ton York refrigerating outfit, 100-ral, C-P combustion pasteurizing outfit, no complete outfit including freeler, brine box, pump, cans, tubs, shaftling, motors, believed:

Send for complete list and details,
PHILADELPHIA RETINNING CO.
North Philadelphia Pennsylvania

Milk and Ice Cream Cans Retinned

Our methods and workmanship guarantee satisfaction and save money for you.

Give us a trial and send for price list

American Retinning Co. 819-23 N. Lawrence St., PHILADELPHIA, Pa

RETINNING AND MILK CANS

TURN YOUR RUSTY CANS INTO GOLD

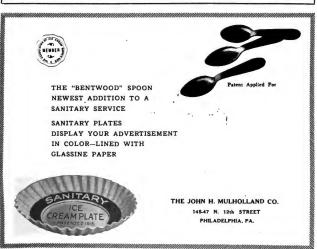
Why discard an ice cream or milk can or any tinned can or kettle which is all there except the protective coating.

Our process of re-tinning puts on a heavier coat than the can had originally, so you have better can equipment at a fraction of the cost of new cans.

We straighten and repair your cans and tune up the shape, restoring all the original value of the can.

Send us a sample today and we will retin it gratis and return to you at once to show you our class of work and also, how much gold you can save.

SANITARY TINNING & MANUFACTURING COMPANY
3753-3759 E. 93rd Street Cleveland, Ohio



Direct from the Freezers into SEALRIGHT CONTAINERS

Some Good Reasons Why

It eliminates expensive cartons and the costly brick system for cream can be hardened in Sealright Containers ready for delivery to dealers or to home trade.

Your desiers can sell more "bulk" cream in less time, handle a larger trade and do away entirely with filling palls, a cumbersome, slow, wasteful and unsatisfactory method.

It provides a neat, attractive, sanitary package which your dealers' customers like to "carry home." There's no unpleasing and provoking dripping. It keeps the cream in perfect condition for serving. In fact, Seniripht Containers are so for superior to the old, worn-out pail method that dealers once having had cream delivered to them in Seniripht Containers wouldn't think of going back to the old, leaky pail idea.

Ice cream manufacturers state that since they began furnishing their dealers with ice cream in Scalright Containers there has been a decided increase in their retail sales.

Start Using Sealright Paper Containers Now! The Perfect Delivery Package

Order thru your jobber. Write us for samples

SEALRIGHT CO., Inc. NEW YORK



In Your Creamery or Hardening Room

Jamison's "Noequal" Revolving Door

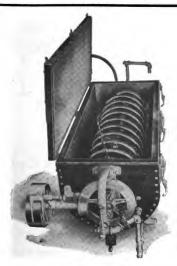


Passes your ice cream and milk cans back and forth without loss of temperature—requires but one operator when fitted with unloading device. Great saver of time and labor—specially constructed for constant hard service. 20 and 40 quart sizes in stock. Ask for catalogue No. 9 with full details.

JAMISON COLD STORAGE DOOR CO.

Formerly Jones Cold Store Door Co.

Hagerstown, Maryland, U. S. A.



One Machine for Many **Duties**

One machine that can do the work of many, that can serve as a mixer, cooler, pasteurizer, ripener, storage vat is the

Cherry Perfection Model 1 Ice Cream Mixer and Cooler

The batch can be pasteurized while mixing or before, and can be cooled to the desired temperature for aging or for freezing.

. Heavily tinned. brass mixing blades travel close to the bottom of the vat and thoroughly stir the heavier parts of the mix like sugar and gela-

Write for particulars.

Cherry coil machines have now been stantiandized in the following groups, any one of which can be formigned in the collowing groups, any one of which can be formigned (CLASS A.1-Sizes 50-600 gailonger-redwood body, natural varnish finish with tinned copper lining, single cooling coil. Cabin top in sizes of 200 gailons and

JGCHERRY COMPANY



ALL STYLES AND SIZES OF ICE CREAM FREEZERS

STEEL PACKING CANS CEDAR TUBS ICE BREAKERS BRICK CUTTERS

Repairs for V. Clad & Son Machinery

THOS. MILLS & BRO., Inc. Confectioners, Bakers and Ice Cream Tools

1301 N. 8th STREET, PHILADELPHIA SEND FOR CATALOGUE OF ICE CREAM TOOLS ICE CREAM





TO give as GOOD service, you MUST be equipped as GOOD or BETTER than your competitor.

The "Cyclone" Ice Cream Brick Cutter Is a Practical Machine

Built by a PRACTICAL man. DOES the WORK required and can be operated by ANYONE. CUT DOWN your brick cutting EXPENSE.

Have a uniform cut.

WRITE FOR CIRCULAR.

LOUIS CUMMINGS 1035 Third Avenue . New York City



Ice Cream Can Liners

Four Good Reasons Why You Should Use

Allen's One-Piece Sanitary Can Liners



- 1. It is Practicable—the only liner which embodies the one-piece feature, which always insures a neat liner that does not work out of place.

 2. It is absolutely sanitary—made of solid manila board, especially treated to with-
- stand moisture, and will not break down, scrape off or adhere to contents of
- 3. It is economical-prolongs the life of your cans, make old, rusty, and dented cans as serviceable as new ones and more sanitary.
- It is good business—gives your product a clean, wholesome appearance which always increases the demand for your brand.

If not for sale by your Jobber, write to

THE ALLEN CANDY CO., Sole Manufacturers, Pontiac, Ill.



A New Catalog For You

Write for "1921" catalog with new schedule of EMERY THOMPSON prices.

The high point of view about the E. T. price reduction is the corresponding increase in value of the EMERY THOMPSON Brine Freezer.

While there is very little, if any, noticeable change in the cost of finer metals, we are able to meet this reduction through our greatly increased manufacturing efficiency which has developed a comparatively higher rate of production.

Will be pleased to send you this year's catalog—just out.

Emery Thompson Machine & Supply Co.

271-275 Ryder Avenue

(6-8 Canal Place, Bronx)

New York City

RETINNING ICE CREAM CANS

A Special Department We do refinishing of old ice cream cans in a special department of our plant which devotes its entire time throughout the year to doing this one thing and doing it well.

Old Cans Made New At Lew Co And we do know how to fix up your otherwise hopelessly rusty old cans so they will be tight and bright and good as new. IT IS NOT EXPENSIVE AND PAYS YOU A DIVIDEND. The government recommends retinning of old cans as a measure of economy.

Sample Co Retinned Free This is the time of year to send cans in for renewal. Send us a sample can NOW. We will repair and retin it without charge and return it promptly, so you can see the quality of our work. Write us when you ship it, so we will know whose it is, and we will do the rest.

OAKES & BURGER CO.

ESTABLISHED 1873

CATTARAUGUS, N. Y.



Southern Tinning Company Johnson City, Tennessee

We Offer:

Prompt Service The Best of Work Moderate Prices

The Only Retinning Plant in the South

The Price of The U.S. Heavy Duty Freezer Is Down Right Now! Why Wait?

Its makers are the first to face squarely the problem of readjustment. The price of the U. S. Heavy Duty Freezer is down in line with price reductions everywhere. There is nothing to be gamed by holding back your order any longer. To buy now is to exercise the highest kind of thrift, the keenest foresight, the best business judgment. Get that "grand and glorious feelin" of being ready for business now—why wait until the rush is on? Own a freezer that will not only turn out the finest smooth, velvety ice cream of the most delicate texture, but one that will also turn out more gallons per day with less trouble, less power, less expense, less labor than any other. No machine is so easy to take apart, clean and put together again. Its many exclusive advantages and incomparable efficiency will enable you

to more than hold your own when the price of ice cream returns to normal.

Advance Features

Almost all of which are to be had only in U. S. Heavy Duty Brine Freezers. Some of these advantages are optional. Many come an standard equipment with every machine.

Roller Bearings, which save money in power, and add to the life of the machine. They demand little attention, require no adjust-ment, are mounted in oil proof housings and save oil.

The Antematic Batch Centrel, which greatly simplifies operation and automatically con-trols the size of the batch.

Widest and Most Complete Range of Sizes, including 40, 60, 80, 100, 120 and 160 quart capacities.

The Largest Ice Cream Freezer in the World, the 160 quart Glant, can be had only in a U. S. Heavy Duty Brine Freezer,

Rapid Vertical Discharge avoids need of watching and wasteful spilling and makes possible quick emptying.

Whipping Device which a slight turn disen-gages for removing and cleaning.

Precooling—increases productivity of labor, saves power and time—multiplies capacity of machine. Hinged Cylinder Cover on large sizes.

eparate Splashiess Openings for cream, fruit and inspection.

Special Arrangements for admitting fruits and flavors to insure quick, thorough mixing. Triple Bipass Brine Control Valve,

No Iron or Other Corrosive Metals to wear or come in contact with the cream inside the freezer.

Adjustable Motor Table which makes it easy to take up the slack in chain. Chain Guard—chain running in oil—insures proper inbrication for chain and wheels.

Easily Converted From Belt to Motor Drive, and vice versa, in the owner's place of business, by ordinary mechanics.



A Typical Installation of five U. S. Heavy Duty Freezers

Shafts, Bearings and Gears of the U. S. Freezer are more solld and heavier than in any other machine, Brine Jacket and Passages designed to avoid clogging and stopping, yet easily accessible for inspection and cleaning.

and creaming.

and Assembled on the Belice Tourcher Unit
ultimated Assembled of Spinta. Soil only the individual parts, but the complete units composing any
machine, can be detached and replaced by others
from the nearest stock by ordinary help in the
owner's place of business.

A Brine Tank can be furnished that is the very easiest to clean and refil.

A REALLY HEAVY DUTY MACHINE THROUGHOUT.

BUY NOW! THE PRICE IS RIGHT. PREPARE AT ONCE FOR SPRING, BE READY TO MEET ALL COMPETITION. OUR CIRCULAR ON "ROW TO TELL A GOOD FREEZER." FREE FOR THE ASKING.

U. S. FREEZER & MACHINE CORP.

270 UNION AVENUE.

BROOKLYN, N. Y.

Representatives and distributers in all parts of the United States and Canada. May we not arrange to have one call on you?



says the big HYDROX COMPANY, CHICAGO

when referring to their ice cream as it is drawn from the freezers.

To quote:—"In order to get it JUST EXACTLY RIGHT, we have a sensitive bit of mechanism which says to us, 'Take it out now' or 'Leave it a minute longer."

This "bit of mechanism" is the Mojonnier Overrun Tester, of which they now have

three.

They also see that their mix is JUST EXACTLY RIGHT, when made up. They accurately test their materials for fat and solids and then standardize their mix to a few hundredths of one per cent.

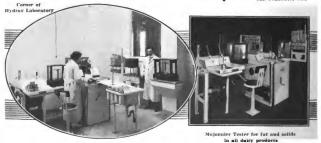
This they do with the Mojonnier Milk Tester. They have proved that accuracy pays. Let our Engineering Department prove it to you. Write for circular and charts.

Sold direct or through your jobber Eastern Office 200 Fifth Avenue New York

Mojonnier Bros. Co.

MILK ENGINEERS 739 W. Jackson Boul. Chicago Southern Office 4931 Margaretta Avenue St. Louis

Western Office 2679 McAllister Street, San Francisco, Cal.



TUB COVERS



TARPAULINS, etc.

Samples and prices on application

Clifton Manufacturing Co.

Everything in Canvas

Waco

Texas





Pioneer Retinners of Milk and Ice Cream Cans and Retinning of All Kinds

PLEASE CONSIDER

Twelve years experience in rebuilding and retinning Milk and Ice Cream Cans.

Most up-to-date and best organized retinning plant in the United States.

We make our own parts, such as Bottoms, Rings, Rims, Handles, etc., hence our ability to quote lower prices.

Write for price list.

ALOIS AUFRICHTIG COPPER & SHEET IRON MFG. CO.

900 South Third Street St. Louis, Mo.

EVERY Ice Cream and Milk Handling Plant, should not fail to investigate the superior merits of the famous

Leffel Scotch Marine Boilers

built in a variety of sizes from 6 H. P. to 100 H. P., and to meet all requirements of the different State Boiler Laws. This Boiler is confidently offreed as meeting in fullest measure and most satisfactory manner, every requirement of the trade, as amply proven by the large number of pleased customers using them for many years.

This Company also builds a line of Vertical Boilers in sizes 3 H. P. and larger.

Complete catalog with information of interest and value on request.



JAMES LEFFEL & CO.

SPRINGFIELD. OHIO

CAN-PRO-CO



THEY'LL COME BACK

Can-Pro-Co Stay On Canvas Tub Covers cannot accidentally beremoved from an icecream tub.

They are fastened, at the back, directly to the tub by means of a loop of heavy rawhide and a brass dee.

The brass will never rust and the rawhide successfully stands the strain placed upon it as a hinge.

When once fastened to the tub, they will "stay on" and come back with the tub, every time. 'And they will do that for many seasons.

CAN-PRO-CO STAY ON TUB COVERS

Can-Pro-Co Stay On Tub Covers are made complete in every detail. The eyelets are brass bound, and the canvas itself is reinforced with heavy patches where the greatest wear comes. Brass tipped, hard finished strings are furnished with the cover, together with brass staples for attaching to the tub.

Can-Pro-Co Stay On Tub Covers are made of the very highest grade canvas, with double sewed seams. Before being cut they are thoroughly shrunk, and specially treated by our own process to make them proof against brine, water, mildew and rust. By their fastenings they are also theft-proof.

Once on a tub they are on to stay. A long list of satisfied users is ample proof of this. Ask us for their names.



Order From Your Dealer

Canvas Products Corporation FOND DU LAC, WISCONSIN



The Can-Pro-Co Apron is waterproof and pliable, and allows freedom of movement of the worker.

Write us for a trial order to be shipped through your own dealer.

The Davies Improved Creamer



MALDEN ICE CREAM CO., G. P. Kimball, Pres. and Treas. Manufacturers of Ice Cream and Fancy Ices.

FACTORY: 43 Exchange Street. Tel. Malden 2730-W. STORE: 229 Pleasant Street. Tel. Malden 2730-R.

MALDEN, MASS., Sept. 3, 1920. THE MANTON-GAULIN

MFG. CO., Boston, Mass. Gentlemen:

Gentlemen:
After an extensive study of the different emulsiners on the market.
After an extensive study of the different emulsiners on the market, and the second of the constantly throughout the year. We find it makes a smoother and better ice cream than the first of the cream is much improved as it is clarified, and we himpored as it is clarified, and we kind that emulsines and does not incorporate air in the mix. Incorporate air in the mix. Incorporate air in the mix. In the control of the cont

Very truly yours, MALDEN ICE CREAM CO. (Signed) G. P. Kimball.



The accompanying photograph was taken in the Plant of the Malden Ice Cream Company, of Malden, Mass., and shows their method of handling the mix. The mix is made up in a vat from which it flows to the Davies Creamer by gravity, the discharge being piped to the cooler located on the next floor. This progressive concern enjoys the reputation of putting out an extremely high grade product. Their choice therefore of a Davies Creamer in preference to any other type of emulsifier is just one more reason why you should investigate its merits thoroughly before ordering emulsifying equipment.

The Davies Creamer is daily doing excellent work for many satisfied users and will, given the opportunity, do the same for you.

Through its use a smoother heavier bodied and richer tasting cream may be made and all worries of a possible shortage forgotten.

Write for our catalogue.

Manton-Gaulin Mfg. Company, of Boston GENERAL SALES AGENTS THE CREAMERY PACKAGE MFG. COMPANY

CHICAGO, ILLINOIS, 61-67 W. Kinale St. KANSAS CITY, MO., 931 W. Eighth St. MINNEAPOLIS, MINN, 218-235 Third St., N. BUFFALO, N. Y., 133-127 E. Swan St., N. OMAHA. NEB., 118 E. Tenth St.

PHILADELPHIA. PA., 1907 Market St. PORTLAND. ORE., 6 and 8 N. Front St. SAN FRANCISCO, CAL., 699 Battery St. TOLEDO, OHIO 119 St. Clair St. WATERLOO, 10WA, 408 Sycamore St.

The Milk Man The Ice Cream Man The Bottler

SHOULD write at once for full information and a color card of



Derycote is brilliant, glossy, colored enamel that beautifies your package and preserves it in heat or cold—from salt, brine, acids or alkalies—and it will not fade. Derycote is used by a large percentage of the nation's manufacturers in food products to give individuality to their con-

Derycote dries quickly on Wood or Metal.

Manufactured by



The National Paint & Varnish Co. Cleveland, Ohio U. S. A.

Can Fnamel



Guaranteed Ca-

pacity Milk Cans Congress & Green Sts. Chicago, U. S. A.

What About Paint?

- for your Tubs and Cabinets -

OMPETITION will be keen next Competition with a summer. Appearances will count. Brine-eaten hoops and staves may eripple the plant when business is best.

ARLINGTON TUB ENAMELS are Brineproof and made to withstand hard knocks, abuse and exposure.

ARLINGTON BRINEPROOF ASPHALTUM gives absolute protection to the inside of tubs (also metal-lined cabinets) for an entire season in spite of heavy pounding.

Both products are money savers for the lee-Cream Trade. We will match your special color.

The Arlington Mfg. Co. Technical and Industrial Paints CANTON, OHIO -



NEW PRICE SCHEDULE READY

(Repeat Orders Now Coming In Prove Worth and Quality of These Cans)



Ice Cream Cans

"Three Pieces Welded Into One"

NO SOLDER NO RIVETS NO LEAKS

"The can of UTMOST UTILITY."

Electric Weld Ice Cream Cans are practically seamless being made complete in the black and then tinued by soaking in pure straits tin. In addition to their strong, sturdy construction due to welding, they can be retinned over and over again at small cost due to the absence of solder, and the fact that they are practically one piece. Note the special features as shown in the illustration.



TEN BIG FEATURES:

 Low cost.
 Absolutely sanitary, no solder, no lead to contaminate contents. 3-Adaptability to retinning. Easily and cheaply retinned-do it your-

self.
—Eliminates the leak nuisance. Bottom and cylinder welded into

a solid mass-can't leak. Strength where needed.

6-Rust-resisting metal.
7-"Non-deforming" lid.

-Exact capacities, standard di-mensions. Lids interchangeable with all standard makes of cans.

with all standard makes of cans, embossed with your name, ca-pacity in quarts, liquid. 9—Quick delivery from our eight warehouses — Boston to San Francisco. 10-Endorsed by leading manufac-

Electric Weld Cans for service. Send us a trial order for these cans and satisfy yourself now before investing money in the old style, wasteful riveted and soldered cans.

(FULLY PROTECTED BY PATENTS PENDING)



TORONTO, CANADA BIRMINGHAM, ALA.

SAN FRANCISCO

ADDRESS ALL COMMUNICATIONS TO MAIN OFFICE

Branch Offices: NEW YORK CITY CLEVELAND

LOS ANGELES

CHICAGO CONSHOROCKEN, PA.

PHILADELPHIA

FLAVOR TAGS FOR ICE CREAM CANS







The above Tags are used on regular packing cans and are held in place by pressing the Lid down and allowing Tag to project. We manufacture them in any size, color-or quantity. State quantity wanted each flavor and we will mail samples and prices.

Our Factory is equipped with the most improved automatic machinery for manufacturing SHIPPING TAGS of every description.



Printed one or two colors one or both sides, wired, strung or with brass evelets as desired, in any size, quantity, quality or color.

Clark & Company

HIDDING TACE

1613 N. Third Street

Philadelphia, Pa.

TAG HOOKS

SAVE DOLLARS

Why use expensive, untidy, time-losing strings or wires while tagging your tubs or pails of ice cream?

SNAP 'EM ON

And use our rustproof TAG HOOKS

Save Time

Figure the cost of a trings or wires. Then think of the value of a man's time while tying the tags on your tubs.

Can't Rust

Our new type of Tag Hooks are made of SPE-CIAL SPRING BRASS. They sell at \$1.55 per hun-dred, including staples. Besides, a 10 per cent dis-count in lots of a thousand er mora Samples on

DALY BROS., N. Y.



TEMPERATURE INSTRUMENTS

Most ice cream manufacturers prefer Tycos Straight Stem Thermometers for use on Brine Ice Cream Freezers.

- THE REASONS!
- Substantial thermometer case, Tube and scale protected from mechanical injury.
 - Easy to read at a considerable distance or in a dark place, Insulated, preventing frosting
 - over of the ecale. Wrench head of substantial proportions to withstand
 - wrenching strains. 7" scale, range minus 20° to 120°, threaded for %" pipe or a %" pipe as may be specified, stem 1%" long including thread.

Compiste information on this and other Twos Temperature Instruments, Indicating, Recording and Controlling, on request.



There's a few or Febr Temperature Instrument 736 for Every Purpose



Doc Makes a Barrel of Germ-X Solution for 70c



Almost every ice cream maker knows he ought to use Germ-X in his rinsing water, but he tries to slide by because he thinks it's too expensive. But that isn't so. Germ-X is so highly concentrated that a barrel of Germ-X solution can be made for 70c. Surely this is cheap enough for anyone.

And Germ-X is certainly effective. It destroys all of the bacteria. Did you know that if your water is hotter than 110° F. the human hand can't stand it? And yet the human hand can't stand it? And yet water at that temperature only destroys about 30% of the bacteria. Your freezers, vats, homogenizers, molds, and cans may look clean inside and yet be alive with quality destroying bacteria, just as water may look as clear as crystal and yet be charged with disease germs. No water except carefully distilled water is free from disease germs. And yet many ice cream makers use water as it comes from the faucet for rinsing purposes and do not purify it by adding Germ-X.

Send \$3.00 for a trial gallon or \$12.50 for 5 gallons. Doc will return your money if you are not satisfied.

The Creamery Package Mfg. Company

61-67 W. KINZIE STREET CHICAGO

HOW DO THE
NEW EXPRESS
RATES
EFFECT YOUR
SHIPPING BUSINESS?

THE GLACIFER DRY PACKER

OFFERS A READY SOLUTION

ICE CREAM SHIPPERS SHOULD INVESTIGATE

THE GLACIFER CO.

102 Merrimac St.

Boston, Mass.



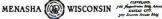
The appearance of your carton suggests something of the quality of the product inside. Menasha Cartons can be relied upon to convey the right impression to your buying public. Quality is reflected in every detail of their manufacture.

Still Menasha Cartons cost little, if any more than cartons less attractively printed on cheaper boxboard. Specialization makes this possible. Follow the example of the most progressive Ice Cream Manufacturers everywhere. Insist on the Menasha Imprint on your Cartons. NOW is the time to order for this year,

MENASHA PRINTING & CARTON CO.

NEW YORK, 200 Pinh Are. LOS AVOELES. You I W Hellman Bidd









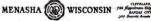
Are you on the alert for something new in the line of advertising for your brand of cream? Why not be the first in your territory to feature this attractive Pail? It will be a decided hit.

The entire line of Menasha Pails has been re-designed and offers a choice of three styles and shapes including wire and tape handles. The trimness and substantial appearance of the new styles will appeal to you.

Menasha Pails are furnished in solid manilla or our special white patent coated stock. Two quart, quart, pint and half pint sizes. We are always glad to send samples and prices.

MENASHA PRINTING & CARTON CO.





Growing

Values

The effort to manufacture a better product is resulting in higher quality ice cream and the discovery of newer methods of production.

Each success brings its contribution of interesting factors which serve to stabilize this great industry.

Contributing to no slight degree of this success is the increasing use of



by the ice cream trade, and the many virtues and uses of this cleaner are greatly assisting the standardization of high quality, nutritious, palatable ice cream foods.

As a consequence, this cleaner stands unrivalled as the most



efficient and economical cleaner for the ice cream manufacturer.

Order from your supply house.

It cleans clean.

THE J. B. FORD CO., Sole Mirs. Wyandotte, Mich.

AUTOMATIC CONE MACHINES

That bake Real Sugar Cones at the lowest possible cost. Control the quality and supply of your cones by using our improved machine.

Let us tell you how.

THE CREAM CONE MACHINE CO. 3806 Hough Ave., Cleveland

Selden Trucks

1½, 2½, 3½, 5 Ton Models All Worm Drive

Write for Complete Information

Selden Truck Corporation Rochester, N. Y., U. S. A.



Saves

Time-Coal-Labor

B-K gives real, positive sterilizing and deodorizing. It works quickly and costs little to use. You cannot get the same recults by any other method in ordinary practice. Dairy and health authorities approve B-K, the concentrated, sodium hypochlorite prepared especially for sanitation.

Economize By Using B-K

Sold by all supply houses.

Ask for Bulletin No. 320

General Laboratories
Madison, Wisconsin

The Turnbull Ice Cream Sugar Cone Machine Automatically Bakes 1080 Sugar Cones per Hour

The only Ice Cream Sugar Cone Baking Machine on the Market

Every Ice Cream Manufacturer Should Have One

The Ever Increasing Demand for SUGAR CONES Necessitates this Labor Saving Device

THE BAKING device consists of a heavy decular table made of iron and equipped with twelve baking trons. Above this table there is a large tank in which the batter is placed and from which it is fed to the baking trons by means of a positive force pump which can be each baking iron. The baking irons are entirely automatic in their operations and they are heated from above and from below by burners using either natural when the power is applied, instantiv the size-size-When the power is applied, instantly the circular

table top begins to more, each baking Iron automatically the outlet plape from the batter tank, shough batter to make one of the desired site is forced into this baking iron, which instantly clove affects of the baking iron, which instantly clove affects of the baking iron, which instantly clove affects one both sides at the same time. Simultaneously another baking iron passes beneath the batter play and this in tara follows. The consumption of feel is very slight and three is absolutely no water, either of fuel to heat the baking iron or of better used in making the colors.

Absolutely no waste of material or power in the use of this machine

The Turnbull Auronates to Sugar Cone Machines should not be confused with the machines sold for taking "present formats," for the machines and for taking "present formats," for the machines and the machines and the formats and the machines and the machines made. It is the original and world-wide known Turnbull for Cream Cone Making Machine, Price within the means of corriginal and world-wide known Turnbull for Cream Cone Making Machine. Price within the means of companion of the machines and the machines are considered to the machin

Send for Prices and Descriptive Catalogue

The Turnbull Manufacturing Co. N. E. Vail & Co., Inc., Proprietors

THE LARGEST SUGAR CONE PRODUCERS IN THE UNITED STATES

MOUNT VERNON, N. Y.

Meyer Ice Cream **Delivery Equipment** Standardized Units **Ouick Deliveries**





A PRODUCT OF 20 YEARS' STANDING

Anti-drip Economical, Long Life, Adaptable Meyer Anti-drip Wagons

Meyer Anti-drip Auto Bodies Meyer New Type Refrigerator Bodies



Meyer Wagon Works Buffalo, N. Y. 216 Elm Street





"80% of all gasoline trucks in New York City could and should profitably be replaced by electrics," an article in the Commercial Car Journal states. Walker Electrics save \$4 to \$8 per day over any "gas" truck—give lowest final trucking cost.

The Walker Balance Drive, with only 10 moving parts—a motor that runs only when the truck is moving—only 6% to 10% yearly depreciation—ease of handling—cleanliness—low maintenance—are all reasons why many of the largest truck fleets are Walkers.

Our new catalog will convince you. Write for copy today.

WALKER Electric TRUCKS LOWEST TRUCKING COST

WALKER VEHICLE COMPANY CHICAGO NEW YORK BOSTON PHILADEPHIA



AMERICA'S LARGEST MANUFAC-TURERS OF ELECTRIC TRUCKS & TRACTORS



What Exide users write:

"If there were any other trucks or batteries that would do the work better or more economically we would have bought them; so far they have surpassed our expectations."

"We have used Electric trucks equipped with Exide-Ironclad Batteries for eight years, and each battery from three to four years. Our trucks average about 30 miles per day."

"Our service has not been interrupted in any manner whatsoever due to any trouble of the batteries."

"We believe the Ironclad to be a most efficient battery and covering all electric truck needs."

Some Points of Exide-Ironclad Batteries

- 1— The Exide-Ironclad Battery maintains a good voltage throughout a normal day's work; therefore the speed of the vehicle remains close to maximum all day.
- 2— It will deliver current at useful voltage up to twenty times the normal rating. The Exide-Ironclad-equipped truck takes steep grades or rough going easily and surely.
- 3— It is different in construction and performance from any other battery made—the result of thirty-three years of battery-building.
- 4— It is the only battery that combines all the vital features of a good vehicle battery maximum power ability, ruggedness, long life, and high efficiency.





Snow and Ice Don't Stop Electric Trucks

Late last March a large company wroste. 'during the winter months just passed we never had our cars laid up for a single day, in the most severe winter New York City has so far experienced from a transportation stand-

nt." The Cars referred to were five-ton electric trucks equpped with Exide-Ironclad

Batteries. Streets clogged with piles of snow and ice couldn't stop these trucks, because their batteries had the power ability to pull them through and "carry on."

For all-the-year-round service of the short-haul-many-stop sort the electric truck is in a class by itself as to economy, reliability, and ease of operation. To a large extent the success of the truck depends on the battery. Besides power, it must have ruggedness, high efficiency, and long life.

The one battery that combines all these essentials is the Exide-Ironclad—a battery designed and built by the largest manufacturers of storage batteries in the world. For dependable day-in-and-day-out service, winter or summer, install Electric Trucks equipped with Exide-Ironclad Batteries.

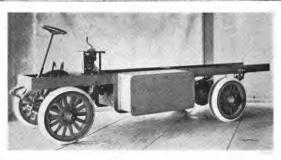
THE ELECTRIC STORAGE BATTERY CO.

Oldest and largest manufacturers in the world of Storage Batteries for every purpose

PHILADELPHIA 1921
Branches in seventeen cities

Exide Batteries of Canada, Limited, 133-157 Dufferin Street, Toronto





Simplicity Durability Economy

Simplicity, durability and economy are the three outstanding features of WARD ELECTRIC TRUCKS.

WARD ELECTRICS are simple in construction. They have but one motor and one pair of driving gears in the propelling mechanism. Contrast this simplicity with other constructions using from eight to thirty-two gears in the driving train

WARD ELECTRICS are durable in operation, partly because of the simplicity of construction and very largely because of the oversize parts used in the various component parts of the truck. For instance, we use the Sheldon locomotive type of axle and have adopted their 5 ton axle for our $3\frac{1}{2}$ ton job and have placed their 7 ton axle under our 5 ton job.

WARD ELECTRICS are economical, not only in first cost, but in operation cost as well. They are economical in first cost, because we give you more for your money than any other electric truck builder. They are economical in operation because of the simplicity of the driving mechanism, the durability of the truck in service and the high efficiency and consequent low current cost necessary for the propulsion of the truck.

Before you make your next truck purchases should you not in justice to yourself investigate WARD ELECTRICS? It will cost you nothing to do this and it may be worth many thousands of dollars to get a satisfactory solution to your transportation problem now.



Ward Motor Vehicle Company Mt. Vernon, N. Y.

Builders of Electric Trucks
750 to 10,000 lbs. capacity



For Ice Cream Delivery

from now on, economy must be the watchword. Service must be efficient, reliable and, above all, economical. Enterprising manufacturers are making greatest savings by using

Electric Trucks



There are simple and definite reasons why electric trucks give a maximum of economy. Electric power is cheap. Ordinary labor easily operates electrics. A safe and sane speed and a thousand less parts ensure low maintenance cost throughout a long life. The steady enjoyment of the economy and reliability of the electric truck is assured when its power is secured from

Edison Batteries



Edison Batteries are different from all other storage batteries. That is why they have much longer life and lower maintenance throughout this long life.

The all-steel construction of the Edison Battery and its alkaline (non-acid) solution are the reasons for the great strength and ruggedness and long life.

To obtain maximum satisfaction specify Edison Batteries for your trucks.

EDISON STORAGE BATTERY CO.

Factory and Main Office: Orange, N. J.

DISTRIBUTORS:

New York Atlanta New Orleans

Boston Cleveland Detroit Chicago St. Louis Kansas City Philadelphia Pittsburgh Washington

San Francisco Senttle Los Angeles



25 ton job for Smith's Ice Cream Company, Dallas, Texas

"A.B.C. Equipped" Ice Cream Bodies



The constantly increasing demand for "A. B. C." equipped ice cream delivery bodies make it imperative to order immediately, to insure delivery in time for the summer rush.

Manufacturers operating this efficient equipment are hastening to standardize "A, B, C," as a solution of summer delivery difficulties. We, therefore, anticipate an inability to guarantee spring and early summer deliveries in the near future.

Write today for specifications and prices.

Anheuser - Busch

St. Louis, U. S. A.

Authorized Builders for the United Sta es of "A. B. C." Type Refrigerator Bodies

Chicago Sales Office: 80 E. Jackson Boulevard

PACKARD



A Year's Saving of \$5066 in Delivery Costs

The work of Packard trucks in the ice cream industry is marked by low hauling and repair costs, combined with a dependability that assures prompt and unfailing deliveries.

A typical record of Packard performance in this exacting service is furnished by The William Neilson Company, of Toronto, Ontario.

A Packard truck which this company operates reduced delivery costs 7 cents per gallon-mile. In one year this represented a saving of \$5066.51, based on the 723,788 gallon-miles covered during that time.

 This is no exceptional record. Packard trucks habitually do more work at lower cost because they are correctly designed, precisely built and scientifically specified to the job.

PACKARD MOTOR CAR COMPANY · DETROIT

Ask the man who owns one

PUMPS

DO YOU NEED ANY HELP IN SELECTING, INSTALLING OR OPERATING ANY KIND OF PUMPING EQUIPMENT IN YOUR PLANT?

WE OR ANY VISCOLIZER AGENT CAN HELP YOU

IF WE CAN'T FURNISH WHAT YOU NEED. WE CAN TELL YOU WHO CAN



FOUNDRY AND FACTORY

ASK FOR BULLETIN No. 57

PUMPS FOR ANY PLACE IN AN ICE CREAM PLANT

UNION STEAM PUMP COMPANY BATTLE CREEK, MICHIGAN

The Viscolizer INSURANCE

WHAT IT WILL DO FOR YOU

The VISCOLIZER will provide an abundant supply of sweet cream, absolutely insuring you against loss of business through cream shortage, during the rush season.

RECLAIMED MILK was successfully made by the U. S. Government with the Viscolizet.

SWEET TABLE CREAM, of greater viscosity without separation or the undesirable "plug" in the bottle is produced by the VISCOLIZER.

ICE CREAM MIXES, the entire batch, including the sugar, filler, etc., can be Viscolized, producing a superior product and effecting considerable economy.

SOUR CREAM so popular with the foreign people is perfectly made with the VISCOLIZER.

EVAPORATED MILK entirely free from butter fat separation and curd formation is produced by Viscolizing.

SALAD DRESSINGS and other fatty emulsions of similar character, as well as medicinal compounds, when treated with the VISCOLIZER, are rendered uniform and inseparable.



"There Is A Viscolizer Jobber Near You"

John W. Ladd Company
Detroit Cleveland

Cherry-Bassett Company
Baltimore Philadelphia

DUMORE

"It Does the Work" Story of the DUMORE_



LAST A LIFE TIME

Whole and skim milk are used to reduce a heavy cream to a lower percentage, but when bottled, there is a precipitate which is objectionable and undesirable. Pasteuriza-

Whole and skim milk are used to remove a continuous when bottled, there is a precipitate which is objectionable and undesirable. Pasteurization, it is well known, also affects the viscosity of cream.

It was thought that a high pressure pump would solve these problems and to this end, experiments were made. After a few changes, it was found that any process of mixing and smoothing out or recombining milk and its products could be accomplished; hence its name DUMORE. It has been doing satisfactory work for nearly four years, and two Ice Cream plants have been using it with excellent results making the mix perfectly smooth and aiding the yield without incorporating air. It is not an invention, there are no patents nor any claims made for such. It is purely a cominion sense idea put into practical use by a man in the business. It has been proven a success and in offering the DUMORE to you, I am doing so at the suggestion of those who have used it to their entire satisfaction for the past four years and feel that the entire trade should be given the opportunity of sharing in the benefit of this labor and money saving device. If patented it would sell for five times its price and still be the cleapest machine on the market for it eliminates operator, mechanic, repair bills, motor and belt troubles, delays and possible accidents.

SAFETY FIRST

Indianapolis, Indiana.

Can not strain or damage the DUMORE with excess pressure: can run empty without damage or danger to pump or person; no mechanical troubles, no operator required. SIMPLE AND SAFE.

PRICE

2000 to 4000 pounds \$1,000.00

4000 to 6000 pounds \$1,250,00

TWO PRINCIPLES

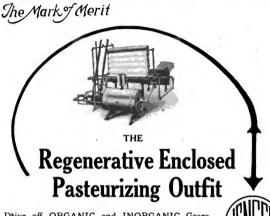
DUMORE Steam Power POSITIVE Discharge FULL SIZE OPENING VS. Squeezing vs. Compression VS. Expanding

Belt Slippage Small Hole Shattering Combustion Explosion

Distributor

ELYRIA ENAMELED PRODUCTS CO., ELYRIA, OHIO

THE NATIONAL STEAM PUMP CO, (not INC.) Upper Sandusky, Ohio



Drive off ORGANIC and INORGANIC Gases before the Cream enters the Pasteurizer—consequently the cream is not heated to a high temperature with undesirable gases and odors present.

Maintains a Uniform Creamy Flavor Chemical or oxidizing action on butterfat prevented by removal of air before heating.

Bacterial Reduction—Chemical Control Produces higher grade butter than any other flash or any vat system.

Eliminates 90% of Second Grade Butter Mold and Yeast Elimination

Write us for further information - NOW.

Jensen Creamery Machinery Company Builders of "Equipment of Practical Efficiency"

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FLYRIA Glass-lined Equipment represents proven Quality-the highest standard obtainable.

In your plant, a piece of Elyria Equipment, whether a single tank or a complete installation, signifies finished mechanical perfection, the result of long experience in the Dairy field.

Make Eluria unur standard The Elyria Enameled Products Company was first to specialize in Glassenamel for Dairy processes and has steadily kept pace with the growth of the industry. A letter to any of our offices will bring an Elvria Engineer to your plant.

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ICE CREAM® Equipment

The PFAUDLERCO.

The World's Largest Makers of Glass Lined Steel Equipment ROCHESTER, NEW YORK

New York Chicago St. Louis San Francisco FOREIGN AGENCIES: Enamelled Metal Products Corporation, Ltd., Imperial Bidga,

Enamelled Metal Products Corporation, Ltd., Imperial Bidgs., 56 Kingsway, London, England Mauri Bros & Thompson, 123-131 Castlereagh St., Sydney, Australia FROM the time when ice cream was a fad, and was eaten by comparawhen it has become part of the diet of millions, it has at all times been recognized as the dessert par excellence. In America the eating of ice cream has become a National Habit—in fact, we are the greatest ice-cream-eating nation in the world.

More than that, the outlook indicates that Americans will eat more ice cream in 1921 than ever before. This alone is sufficient reason for being thoroughly equipped.

The demand will be greater, but it will also be more discriminating. You can therefore afford to have no equipment but the best.

Write for complete information on our Glass Lined Mixers and Storage Tanks, and for our Booklet on General Dairy Equipment



CHAMPION ICE BREAKERS

Champion No. 11 shown here has a capacity of 40 to 60 tons of broken (not crushed) ice per hour and can be set on the floor or hung from the ceiling and is designed for the cream factory.

Motor driven, either belt or chain drive. The motor is protected by an extra heavy reinforced iron hood. The teeth are diamond pointed and



use drives teeth more firmly into sockets. They are easily removed for sharpening. All gears enclosed in heavy castiron guard. It is back geared with ring oiler bearings, all main bearings being interchangeable. All nuts and holts of Tobin bronze and rust proof.

Other sizes to meet the needs of any plant.



Write for descriptive catalogue and prices now.

THE ALLMAN GAS ENGINE & MACHINE CO.

Office: 461 Canal St., New York, N.Y. Factory: Arlington, N. J.

The Improved Little Giant

Can Washer

Washes Cans Clean and at Lightning Speed

That's the reason the largest plants are using it. All sizes of caus, from 4 to 40 qt., are thoroughly cleaned both inside and outside without change of brushes. Washes cans better than machines costing many times more. Furnished either with belt drive or with direct connected motor.

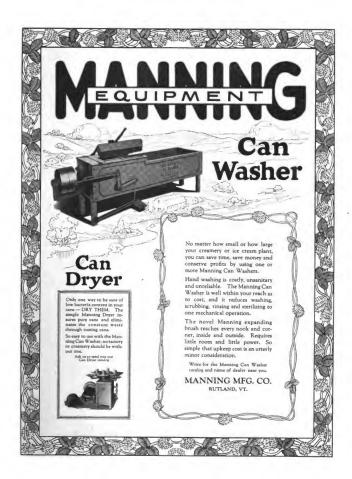
Catalog for the asking.

C. Doering & Son, Inc.

Lake and Sheldon Sts.

Chicago





Keep Your Picks Sharp





(A sharp pick penetrates more easily than a dull one—thereby saving power)

You can easily do so if you have a Creasey lce Breaker.

The picks of the Creasey Ice Breaker are friction held in tapered sockets in a heavy cast-iron drum. They can easily be loosened at any time by a blow from a hammer and as easily replaced. It is therefore easy to take them out for sharpening and straightening, should they be damaged by tongs or other foreign objects. They do not come loose in service, as each stroke against the ice only seats them more tightly. There are no rivets, bolts or must to come loose or rust tight.

Other Creasey features are the movable front plates and the interchangeable combs by means of which the size of the broken ice is regulated, the convenient ice rest at the top of hand-fed sizes, the split babbitted bearings, easily renewed and running with least friction, the delivery plate for delivering the broken ice front or rear, etc., etc.

The Creasey Catalog 909-T sent upon request, describes 20 different sizes and types, including Hopper-type Creaseys for setting close to or just beneath the floor to save lifting the ice cakes, direct-motor-driven Creaseys, which can be located independently of shafting and belting, etc., etc.

Joseph S. Lovering Wharton, Mfr.

3123 N. 17th Street

Philadelphia, Pa.

12

Copper Condensing Pans FOR ALL CLASSES OF MILK



Large amount of heating surface which very low the pan. Large steam inlets and outlets for utilizing exhaust steam.

Get our Blueprints with Specifications and Prices.

GROEN MFG. CO., Inc. 4529-37 Armitage Ave. Chicago, U.S. A.

Milk Condensing Machinery

IN ALL CAPACITIES

Our machinery will make all the different kinds of condensed milk that is manufactured. Also condenses buttermilk, milk for drying, also for chocolate manufacturers, etc. Write us.

Small Caracitly High Type Vacuum Pan and Patented Condenser

R. R. Rogers Co. 3328 Chope Place

Detroit, Mich.

ESTABLISHED 1884

Ice Harvesting Tools and Machinery

The Ice Cream, Soda Fountain and Confectionery Trade appreciate the value of a good cold storage and plenty of Ice during the summer. The set of tools suggested here are suitable for harvesting 100 to 500 tons of Ice,-Everyone gathering Ice can afford his own outfit. Place your order early.

LIST OF ICE TOOLS

SUITABLE POR HARVEST. ING 500 TONS OF ICE,

No. 315 2-in. Ice King Plow.

- 1 No. 412 Plow Rope. 1 No. 422 5-ft, Ice Saw

- 1 No. 432 5-ft. Ice Saw.
 2 No. 444 Splitting Forks.
 1 No. 457 Ceiking Ber.
 1 No. 458 Bar Chisel.
 1 No. 470 Floor Shever.
 1 No. 476 Ring Splitting Chisel.
 1 No. 500 Scoop Net.
- dos. No. 520 414-ft. Ion doz. No. 520 6-ft, Ice Hooks doz. No. 520 12-ft, Ice Hooks.

This list may be added to if conditions demand.

SEND FOR COMPLETE CATALOG.





The Ruff Condensing Evaporator versus

Business Worry

The Ruff Condensing Evaporator is the positive means of side-tracking any worry about what effect financial and unsettled labor conditions will have on your business the coming season.

Because, you will be able to reduce the cost of manufacturing your Ice Cream sufficient, so that your justly entitled net income will not be decreased in case sales should drop off in 1921 as might be expected.

Besides, the flavor is a lot better—the best reliable requirement to build up any business.

Don't Wait But Order Now

With a Ruff Evaporator running when the season is on your manager is well safeguarded against business worry.

THE CREAM PRODUCTION COMPANY

Manufacturers for United States,

B. TRUDEL & COMPANY
Manufacturers for Canada

Port Huron, Michigan

Montreal, Quebec

Better Mix at Lower Cost



36 inch Vacuum Condensing Unit; capacity 185 gal. of finished mix per hour. Floor space 8x10 ft., 11 ft, high,

A Better flavored Product, Overrun more easily obtained, Substantially reduced costs, More profits.

These are some of the results you will obtain by the installation of a

Mojonnier Vacuum Condensing Unit

in your ice cream plant. The 36" unit illustrated will handle approximately 1850 gallons of finished mix per 10 hour day which should produce 3700 gallons of finished ice cream.

Mojonnier service goes with each condensing unit. This includes the best method of installing, operating and instruction in the manufacture of milk, ice cream mix and all forms of condensed milk.

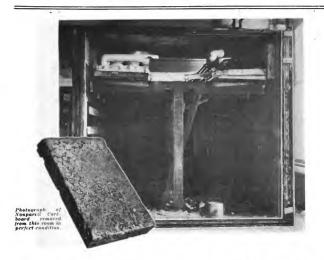
Write for circular and further information.

Mojonnier Bros. Co.

739 W. Jackson Boul.

Chicago

Branch Offices: New York St. Louis San Fran-



Serves Fourteen Years and Goes Back for More

THIS is a photograph of a partially dismantled cold storage room in the Boston Store, Chicago. It was built in 1906, using 2 inches of Nonpareil Corkboard Insulation in the walls, ceiling and floor. After 14 years, the room is being torn out and rebuilt in another location, and the same Nonpareil Corkboard is being used for the insulation of the new box.

Why shouldn't it be? The Nonparcil Cork is as dry and sound and strong as the day it left the factory. In no respect is its efficiency inpaired in the slightest degree, and the contractors state that it could be sold on the market today for new corkboard. There is no reason why the insulation should not serve the second 14 years just as efficiently as it has served the

You who have a room to insulate, balance facts against claims. Permanent insulation is worth money to you.

Nonpareil Corkboard Insulation

For Cold Storage Rooms

More facts on insulation and refrigerator construction are contained in the 36-page booh, "Small Cold Storage Rooms," a copy of which will be sent on request free of charge. You will find it a big help he planning your room and a sure guide to results that satisty.

Armstrong Cork & Insulation Company, 109 Twenty-fourth Şt., Pittsburgh, Pa.



East Liberty Plant, Rieck-McJunkin Dairy Co., Pittsburgh, Pa.

MODERNIZATION

Ice Cream and Dairy Plants Can Be Modernized While Under Operation

WHEN your plant can not produce more goods than you can sell—when new business can not be taken on—production facilities should be increased. In many cases complete new buildings must be provided; in others, however, it may be possible to convert old dairies or ice cream factories into efficient, well-equipped plants.

Modernization can often be accomplished by additions to old buildings; or by installing new handling methods; or by completely revamping the old plant, conserving such of the old buildings as may be used to advantage in the new layout. A careful study of each particular situation will best determine what procedure should be followed.

We have modernized ice cream and dairy plants for many concerns. In each instance we studied the problems from the operating standpoint, laid out the improvements and the construction was executed by local contractors under the eyes of our visiting superintendent.

If you are confronted with building or production problems, regardless of their nature, consult the McCormick organization. Our long experient in handling the most difficult and complicated ice cream and dairy plant problems may prove invaluable to you. An interview does not obligate you in any way, Just write us that you are interested.

The McCormick Company, Inc.

PITTSBURGH Century Bldg. NEW YORK

Specialists in Ice Cream and Dairy Plant Architecture and Engineering

8



BRANCHES.

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THE BETTER KIND

We teach you to make condensed milk

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Builders of better Condensing
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F. M. WOODFORD ENGINEER AND ARCHITECT

Plans, specifications and supervision of buildings and equipment for ice cream and dairy plants. Tests and examinations of existing plants.

Preliminary estimates and information free and without obligation.

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UNITED CORK COMPANIES LYNDHURST, N. J.

Manufacturers and Erectors

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SPECIALIST FOR
DAIRY AND ICE CREAM BUILDINGS AND EQUIPMENTS
CONSULTING SERVICE BASED ON EXPERIENCE
PLANS. SPECIFICATIONS AND INSPECTION WORK



Cool your Hardening Room with

Vilter Refrigerating Machinery

and also

Make your own ice. We are in a position to supply your requirements.

THE VILTER MANUFACTURING CO.
888 Clinton Street Milwaukee, Wis.



Make Preparation Now

for next season's Ice Cream trade. Do you want to operate Economically? You certainly do. Then, use the exhaust steam, to produce refrigeration, which now goes to waste in your plant. The use of exhaust steam, the elimination of rapid running parts, highly efficient economical service are the three principle selling points of

Vogt

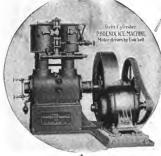
Refrigerating Equipment for Ice Cream Production

Let us send you a Bulletin

HENRY VOGT MACHINE COMPANY, Louisville, Kentucky

Manufacturers of Ice and Refrigerating Machinery, Drop Forged Steel Valves and Fittings, Water Tube and Horizontal Return Tubular Boilers, Oli Refinery Equipment.

Branch Officers: New York, Chicago, Tubas, Okla.



Dependability

SURETY of delivery of your product, uniformity of its quality and firmness, depends as much on reliability of refrigeration as on any other one

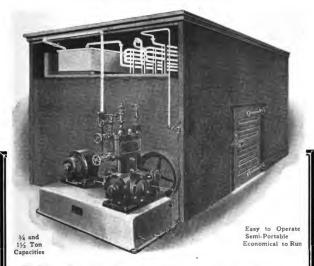
It is notable that in plants which make a feature of quality and dependability of supply, there will invariably be found PHOENIX Ice Machines or Refrigerating Systems. Phoenix Engineers take pride in the 25-year-old record of Phoenix equipment.

NIX CATA-LOG is a ready reference book on Refrigeration, send for your ropy today.

THE PHOENIX ICE MACHINE CO.



2708 Church Ave. Cleveland Ohio



CP Refrigerating Systems In Small Sizes—At Low Price

UST the outfit for small storage rooms or refrigerators, for soda fountains, for cooling water for carbonating purposes, for cooling compartments on candy machines, etc., etc.

Avoids the muss and bother of ice cooling systems. Much less expensive, too, for the CP System will provide refrigeration at temperature desired for less than 8c per hundredweight as compared to ice refrigeration. The temperature is dry and uniform-two important features to prevent spoilage of products.

The 34 and 11/2-ton CP Outfits are self-contained. In other words, the high side or operating mechanism are in one compact unit. The compressor and motor are mounted on a cast from base inside of which the receiver and condenser are located. No concrete foundations are necessary. Outfit can be moved from one location to another. Can be supplied for operation by hand or for electric thermostat automatic operation.

We build mechanical refrigerating systems in all sizes, either vertical or horizontal as desired. Hundreds of CP Systems have been installed in ice cream plants to date. Consult us without obligation if you have a refrigeration problem,

The Creamery Package Mfg.Company

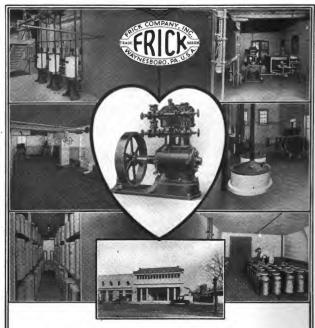
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MAKING
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ING MACHINERY. SYSTEMS, DAIRY MACHINERY AND



The Heart of An Ice Cream Plant

An Ice Cream Plant to meet the over-taxing demands of the mid-summer rush must have a strong and reliable equipment.

The Heart of the Plant-the Compressor-must be dependable. With poor heart action the other organs are badly handicapped and the producing ability of the plant suffers together with the owner's profits.

The first and principal requirement for the FRICK Compressor is-that it must be dependable.

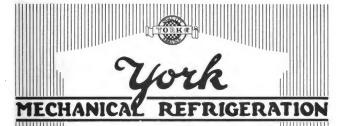
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ICE CREAM BUSINESS

Lowers cost of production-Increases output



QUALITY



SERVICE

YORK MANUFACTURING CO.

lee Making and Refrigerating Machinery Exclusively

YORK, PA

WE DESIGN AND INSTALL

COMPLETE

ICE CREAM AND DAIRY PLANTS

K. W. SCHANTZ, Inc.

Engineers and Contractors

78 Main Street

Buffalo, N. Y.



DIVIDENDS



Will largely depend upon your wise choice of a

REFRIGERATING PLANT.

Eliminate troubles by purchasing

The Simplified Arctic

A Plant That Has Always Made Good

Both Horizontal and Vertical Types
In sizes from 1 to 1000 tons capacity
We specialize in Ice Cream and Dairy

Plants

Send for information blank, if you desire quotations

THE ARCTIC ICE MACHINE CO., Canton, Ohio



CONTINENTAL

Direct Expansion Ice Cream Freezer

SAVES TIME

You can start freezing ice cream at the same time you start compressor. No Delays.

Isn't this a big item?

Freezer has right temperature at all times if compressor is running.

No wait for brine to cool.

You can freeze a batch in jig time.

He also manufacture a full line of refrigerating machinery.

CONTINENTAL MACHINERY COMPANY

General Office

Factory

111 W. Monroe St., Chicago, Ill.

Fort Madison, Iowa

The Miller Pasteurizing Machine Company, in order fully to protect the rights acquired by it in the property and business, including the good will of the business, of The Tyson Company, recently joined, as plaintiff, in a suit in the Court of Common Pleas in Stark County, Ohio, against The Tyson Company, The Advance Dairy Machinery Company, and Frank Tyson, among others, as defendants. Upon the issues joined the Court has found in favor of the plaintiff and against The Tyson Company, The Advance Dairy Machinery Company, and Frank Tyson among other defendants.

As a result of the decree in our favor, the defendants, The Tyson Company, The Advance Dairy Machinery Company and Frank Tyson are now enjoined, among other things, from manufacturing or causing to be manufactured, any iccream freezers covered by Letters Patent of the United States owned by The Tyson Company at the time of the sale; from filling or supplying any order for repairs and parts for such Tyson ice cream freezers; and from doing any act or thing which will directly or indirectly interfere to any extent with our exclusive enjoyment of the right, license and privilege to make, use and sell all devices covered by the claims of such Letters Patent.

They are also now enjoined from doing any act or thing which will directly or indirectly interfere to any extent with our exclusive enjoyment of the business or good will of the business owned by The Tyson Company or Frank Tyson, jointly or severally, at the time of the making of the agreements of sale; and from affirmatively doing any thing to cause the public or trade to believe that The Advance Dairy Machinery Company is the successor in business to The Tyson Company.

The Miller Pasteurizing Machine Company alone is licensed to make Tyson freezers. It is now in possession of the manufacturing equipment, stock of material, etc., necessary to enable it to continue the Tyson line. We are manufacturing, intend to continue manufacturing and are prepared promptly to furnish Tyson freezers and parts and supplies therefor, maintaining the established standard and quality of product.

We also are alone authorized to fill orders for parts, repairs and supplies for Tyson freezers and are prepared to do so promptly and at reasonable prices.

H. H. Miller Industries Company

THE MILLER PASTEURIZING MACHINE COMPANY

Canton, Ohio

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PATENTED
THE MILLER HORIZONTAL
Pyramid Type



PATENTED
TYSON MODEL "C"
With Fruit Hopper
Patents Nos. 42,791, 43,277, 999,473 and
1,001,906. Other Patents Pending



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THE MILLER-HOEFLER
Double Beater



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MILLER ANVIL BASE PATTERN
40 Quart-Motor Drive



THE C-B CALENDAR

Two Efficiency Experts for Ice Cream Plants



Thomas Batch Measure For Any Brine Freezer

This remarkable time, labor and mix saver is going to make money for a lot of ice cream manufactures during the coming season. It enables you to keep exact records of flavor costs and mix gallonage; to check overrun; to reduce labor; to eliminate waste. These are the things to watch, if your business is to be profitable—the day of haphazard operation is past.

past. Enthusiastic letters are daily received asking for quotations on equipping freezer rooms with the Measure. Write now for your booklet telling the whole revolutionary story, and for quotations covering your freezer room. Please state what size and make freezers you



Hendler Patent Can Truck

Introduce a fleet, or even one of these Can Trucks into your plant. You then have a storage space for your lids and cans—in units, which may be rolled into out-of-the-way places; which keep the cans with their lids, and automatically counted; which permit the transit of cans without tearing down the pile or rack; which drain the cans after washing and prevent slop before washing; which, in short, permit you to handle your cans systematically, quickly and conveniently, from the time the empties enter the factory until they are filled at the freezer.

Each truck holds 108 two-gallon cans, 96 three-gallon cans, or 60 five-gallon cans, with covers. Made of durable steel, thoroughly galvanized.

For sale by leading distributors everywhere in the United States.

Price \$50 each

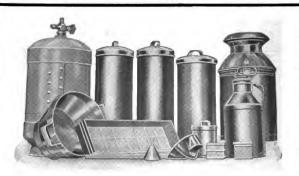
the lowest priced investment for efficiency you'll ever have the chance to make.

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CHERRY-BASSETT COMPANY

PHILADELPHIA

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The K-W Trademark Stamped On Milk and Ice Cream Cans means

QUALITY—the best that can be produced SERVICE—quick shipments followed through to destination

If you are not familiar with K-W quality and service, a trial will convince you that quality and service are not merely advertising.

We are still maintaining our policy of not accepting orders unless we are sure of filling them.



Keiner-Williams Stamping Co.

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Richmond Hill, N. Y.

THE ICE CREAM TRADE JOURNAL

Vol. XVII

No. 3

A PRACTICAL
HELPER
FOR
ICE CREAM
MANUFACTURERS
AND A
CHRONICLE
OF TRADE EVENTS



Official Organ of

The National Association of Ice Cream Manufacturers. The Association of Ice Cream Supply Men.

The Ass'n of Ice Cream M'Trs of New York State. The Association of Ice Cream M'Trs of Pennsylvania. The Obio Association of Ice Cream Manufacturers. The Indiana Association of Ice Cream Manufacturers. The Association of Ice Cream Manufacturers. The Missouri Association of Ice Cream Manufacturers. The Ice Cream M'Trs of Menyland, New England Association of Ice Cream Manufacturers. The Ice Cream M'Trs' Association. Arkansas Association of Ice Cream Manufacturer. Minnesota Association of Ice Cream Manufacturers. Minnesota Association of Ice Cream Manufacturers.

North Carolina Ice Cream Manufacturers' Association.



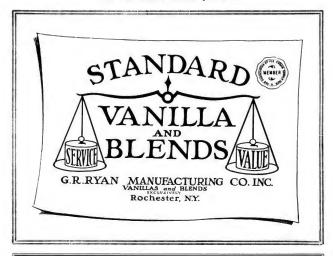
MAR.CH, 1921

PUBLISHED MONTHLY BY

THOMAS D. CUTLER 171 MADISON AVE. NEW YORK

TWO DOLLARS







For COFFEE ICE CREAM

Use

THE OLD RELIABLE

Arabian Coffee

Flavor

It has stood the test for many years

D. ABELSEN & SON, PROVIDENCE, R. I.

Successors to ABELSEN & SCOTT

HUDSON'S

FAMOUS

Ice Cream Flavor

Vanilla and Tonka Blend No. 52 Special

Finest Flavor Made

WE WISH TO CALL YOUR PARTICULAR ATTENTION TO OUR HUDSON'S ICE CREAM FLAVOR VANILLA AND TONKA BLEND NO. 52 SPECIAL (all Vanilla with a small per cent Tonka), a piece of goods which is especially adapted where Ice Cream is made for commercial purposes and shipping. The Flavor' positively will not freeze out. Where Condensed Milk, Homogenized Cream or Pasteurized Milk is used it takes a very strong flavor to get satisfactory results and overcome the condensed or powdered milk taste, and Hudson's Ice Cream Flavor Vanilla and Tonka Blend No. 52 Special is especially adapted for this purpose. The small percentage of Tonka blended with the all Vanilla causes the extract to retain its fruity flavor when exposed to freezing.

TONKA BEANS, and just as pure and wholesome, and, best of all, Vanilla and Tonka will give the desired results at half the expense.

Put up in 10-gallon kegs, half barrels and barrels only.

10-GALLON KEGS	\$5.50	Per	Gallon
HALF-BARRELS	5.25	Per	Gallon
DADDETC	E 00	D	C-11

Unequalled for the Ice Cream Manufacturer. One and one-half ounces give a mild, rich flavor, and two ounces a high flavor to what will make a 10-pallon batch of Ice Cream.

Let us send you a sample package, freight prepaid, to your city. You may return same at our expense if not entirely satisfactory.

Ice Cream makers who are looking for profit and reputation are using our Hudson's Ice Cream Flavor Vanilla & Tonka Blend No. 52 Special only.

The Hudson Manufacturing Company



Gabe S. Wegener, President

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Branches:--Vera Cruz, Mexic

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Right NOW Is The Time To Buy!

Prices are reduced to lowest point — in some cases below Pre-War standard.

The finest flavor fruit and more solid packed fruit than any goods on the market for the ice cream trade. The leading and largest ice cream factories will tell you that REYAM BRAND goods give most satisfaction. Consentrate on this line, turn your stock often and you will enjoy a big success in 1921.

New REDUCED PRICE LIST now ready: write TODAY for your copy

Note this list of REYAM BRAND Standardized Products; all of Super-Excellent Quality.

"Whole-and-Broken"
MARASCHINO CHERRIES
(red or green)
CRUSHED CHERRIES
CRUSHED PEACH
ORANGE CRUSHED PINEAPPLE
CRUSHED PINEAPPLE
TUTTI FRUTTI
"CHERRY-COCOANUT"CHERRY-COCOANUT"PINEAPPLE SALAD"

COLD PROCESS STRAWBERRY in all style containers—½ gal. up to 50 gal. bbls.

Mr. Pennsylvania Ice Cream Manufacturer

We offer "Whole-and-Broken" Maraschino Style Cherries—also Crushed Cherries packed in No. 10 cans—guaranteed fully by us under Pennsylvania Food Laws. All other fruits fully warranted by us to comply with state statutes.

Every Ice Cream Manufacturer

can make a liberal profit jobbing our high-class line of Crushed Fruits. Concentrated Syrups and Marshmallow Creme. Under our Drop Shipment Plan, no surplus stock need be carried. Write us promptly regarding our money-making propositions.

The Cincinnati Extract Works
422-424 West Fourth St. Cincinnati, O.

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LOWNEY'S

Bulk Cocoa

(in Barrels)

Liquor Chocolate

for Ice Cream Manufacturers, Bakers, Lunch Rooms, Restaurants, etc.

Cocoa Powder Cocoa Butter

The Walter M. Lowney Co. BOSTON, MASS.

A PURE VANILLA CONCENTRATE FORICE CREAMSERVICE

YOUR CUSTOMERS WILL APPRECIATE THE NATURAL, RICH FLAVOR OF PURE VANILLA WHICH "FREEZES IN" WHEN USED IN ALL FROZEN DAINTIES.

VANILLA ISOLATE

WRITE US TODAY AND LET US PROVE IT.

FOOTE & JENKS

EXPERT FLAVOR SPECIALISTS

JACKSON MICHIGAN

Mapleine Ice Cream His Next Best Seller

One manufacturer in New England last season wrote us that of eleven stock flavors Mapleine was his best seller next to vanilla.

Mapleine commands this sale in a maple country because it gives to ice cream the flavor of maple itself.

Mapleine

"The Golden Flavor"

- -freezes to a perfect maple and the flavor holds true no matter low long the ice cream is stored.
- -Made from vegetable materials and highly concentrated.

Build up your maple sales with Mapleine.

\$3 brings a quart bottle for trial.



Crescent Manufacturing Company

New York Office: 105 Hudson Street

SEATTLE, WASH.

CUSTARD FLAVOR

For Ice Cream

Ninety-two per cent of trial orders mailed throughout the country has brought in substantial stock orders.

The rich color of the Egg combined with the delicate and precise flavor of MOTHER'S Custard pies is reproduced in making a delicious Custard Ice Cream of quality distinction.

Working sample for a 40 qt, stand-36c or 11/2c to flavor and color one gallon of cream when purchased in 5-gal, lots.

Acme Bisque, Shelbark or Walnut Flavor Working Sample for a 40-quart Freeze, 60c

Concretes of all flavors

Non-alcoholic Extracts

Acme Extract & Chemical Works Hanover, Pa.

Branch: Toronto, Canada

For Over 20 Years

We have *specialized* on Vanilla Extracts and Vanilla Compounds

We are *entering contracts* for this Season!

Proprietors of "VANOLEUM". The Original concentrated vanilla flavor. We warn the trade against worthless imitations having similar sounding names claiming to be "the same as Vanoleum"

Corrizo Extract Company

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Folks Eat Ice Cream Because They Like It

They Don't Like It and Don't Eat It

—Unless the Flavor Is Right

MAYBORN PRODUCTS ARE RIGHT

MAYFLOWER

Ice Cream Flavoring \$2.75 Per Gal, BBl, Lots \$2.50 Per Gal, 5 BBl, Lots



VAN-COM-TON

Ice Cream Flavoring
Unusually Mature
\$3.50 Per Gal, BBl.
\$3.25 Per Gal, 5 BBl.

Scientific methods apart from those heretofore employed insure a finished product which retains the Full Strength, Bouquet and Aroma of the raw material. An uncommon result in the business but the rule with Mayborn Products.

Send for Trial TIB MAYBORN FOOD PRODUCTS CO. ARE YOU Order. 10 Gal, at barrel Price CLEVELAND, ONIO. ACQUAINTED?



Cold Process Strawberry

to be right, to have the flavor must be made from sound, ripe berries. It must be put up half fruit and half sugar.

That's the Way we Pack Our Cold Process Strawberry

That's why it has so much flavor and why it makes the ice cream taste as if delicious, deadripe, fresh-picked berries, had been used in the making of it.



Ask our salesman or write us for prices and particulars



H. A. Johnson Co.

221-227 State Street, Boston

BRANCHES: NEW YORK AND PROVIDENCE

"Give Me Caramala Ice Cream"

Never add any other flavor or color to Caramala for Caramala Ioe Oream.

PRICES:

Less tham 5 gals., \$7.00; 5 gals., \$6.75; 10 gals., \$6.50; 25 gals., \$6.25; 50 gals. and over, \$6.00.



Caramala, an absolutely Pure Food Product, guaranteed under all Federal and State Food Laws. It is not an imitation of caramel or burnt sugar flavor. It is a new, distinct and better flavor.

Reg. U. S. Patent Office.

CARAMALA is now virtually universally known throughout the United States and Canada, and its users are enjoying an ever-increasing CARAMALA business, embracing also its manifold combination uses.

CARAMALA MERIT is recognized by ice cream manufacturers not alone in Caramale flavoring value, as evidenced by the instant and sustained CARAMALA response from the public, but also in the CARAMALA physical improvement in CARAMALA ICE CREAM, or any ice cream in which CARAMALA is present, even in a less amount than the full flavoring requirements, as in CARAMALA NUT ICE CREAM, CARAMALA ICE CREAM PUDDING, etc.

CARAMALA, a fluid, requires neither waiting nor preparation.

CARAMALA ICE CREAM is always the smoothest and most firm ice cream in comparison with any other ice cream made from the same stock mix, and hardened under identical conditions.

Directions: - Use one ounce CARAMALA to each gallon in your mix, or full four ounces for ten gallons of CARAMALA ICE CREAM,

Send in your trial order, and if any CARMALA claim we make is not sustained by your CARAMALA experience, simply return us the shipment within 30 days, at our expense. We make this offer on account of our certainty of your satisfaction, but we want you to feel positive assurance in sending in the trial order.

CARAMALA signs commensurate with order size supplied on request, as well as CARAMALA recipes,

Order direct on through any of the following well-known firms:

Order direct or through any of	the following well-known firms:
J. G. CHERRY CO Cedar Rapids, Ia. RILEY HAUK SUPPLY CO St. Louis, Mo.	HAZELWOOD CO., LTD Spekane, Wash. RICHARDSON & HOLLAND, Inc. Seattle, Wash.
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CENTRAL OHIO SUPPLY CO. Columbus, Ohio.	HEATH & COMPANY Wilkes-Barre. Pa
DAIRYMEN'S MFG. & SUP. CO. St. Louis, Mo.	CHERRY-BASSETT CO Baltimore, Md.
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Use the New Concentrate Eliminating All Waste

NEW MEXOCINE

Bean Vanilla, Vanillin, Coumarin and Tonka Flavors

IT IS ECONOMICAL

Use quarter ounce or dessert spoonful to flavor 10 gal, batch loe Cream. Use quarter ounce or dessertspoonful to flavor 100 lb. batch candy. \$7.00 per pint

5 pints \$6.75 per pint 10 pints \$6.50 per 25 pints 6.25 per pint 50 pints 6.00 per TERMS: 2% 10 DAYS 30 DAYS NET

Why pay for unnecessary alcohol when it is absolutely worthless from a flavoring standpoint? Why pay freight on water?

Samples on Request



REX EXTRACT CO.

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Brooklyn, New York City

Scott's Coffee Flavor-

101 Vanilla

REALIZING that the only sure foundation for a permanent business is merit in the products offered and delivered, I am devoting my best efforts and matured experience to the production of flavoring specialties to be sold strictly on their merits—flavoring specialties which are exactly as represented and which must satisfy the buyer before the sale is complete.

B. B. SCOTT
24-26 Ormsbee Avenue, Providence, R. I.



STRAWBERRIES

Two parts Fruit, one part sugar, with 1/10 of 1% Benzoate of Soda, in barrels, weighing about

$19\frac{1}{2}c$

POUNI

Write us for Carload quotations; also quotations on 1921 Strawberries.

SHELLED WALNUTS

55-pound cases

19c

worth 25c a pound.

Terms:-Net, F. O. B. NEW YORK

C. H. JONES CO. 276 West Broadway New York

PROVE FOR YOURSELF

THAT

COMFORT'S

Mexican Vanilla Bean

(DRY FORM)

IS THE

PERFECT PRODUCT

Write for working sample, stating whether you wish it with or without seeds showing.

I. W. COMFORT

Aschenbach & Miller, Inc. 400 North Third Street Philadelphia. Pa.



Warner-Jenkinson Co.

St. Louis



Manufacturers of Ice-Cream Makers' Supplies and Certified Food Colors.

THE BOTTLER'S AND ICE-CREAM MAKER'S

HANDY GUIDE .

(1921 EDITION)

is now under press and will be ready shortly for mailing. This is a complete little treatise containing 100 pages of practical and scientific information. Worth \$10.00. The book is sent free to all our customers. If you are not on our mailing list, write in and have your name included. It tells you all about ice-cream making and how to use Red Seal Goods to produce Quality Ice-Cream.

Quality is what you are looking for and Quality is what you get when you buy Red Seal Goods.

For flavoring your mix use:

Red Seal Vanillas
Red Seal True Fruit Extracts

For stabilizing your mix use:

Red Seal Purity Powder Red Seal Ripener

For coloring your mix use:

Red Seal Certified Colors Red Seal American Cheese Color (Vegetable)

At your fountain use:

Red Seal Marshmallow Red Seal Crushed Fruits Red Seal Syrups



Satisfaction Guaranteea

Warner-Jenkinson Co.



"W HEN buying Vanilla Flavor you have a perfect right to be d - n particular about what you are getting."
"Purchase a standardized flavor from a house above reproach and protect your Vanilla

investment.

TISCO

Ice Cream Flavor

\$3.80 per gallon packed in barrels

Two quarts of Tisco 545 Ice Cream Flavor produces a perfect flavor in 100 gallons of dairy mix, or 200 gallons ice cream.

Manufactured by

The Tisco Company WM. M. BELL, Pres.

Chicago, U. S. A. 6 East Lake Street

BRANCH OFFICES Minneapolis, Los Angeles, San Francisco and San Antonio.

The King of Ice Cream Vanilla Flavors

Made Mexican Beans Fortified WILL NOT FREEZE OR COOK OUT

34 Oz., 7c. Flavors. 51/2 Gal. Mix of Ice Cream 3 Drams, 10c. Flavors, 100 Pounds of Candy

MANY SATISFIED USERS.

	Pack	rd					Price Per Pint
	Pint	Bottle					
5		••					4.50
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Guaranteed to please or money back.

DOWNEY-TURNOUIST & CO.

Manufacturing Chemists and Importers Makers True Fruit Extracta SODA WATER FLAVORS

537 N. Dearborn St. CHICAGO, ILL.

WILL NOT FREEZE OUT

NO ALCOHOL

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Finer, Stronger and Better Than VANILLA EXTRACT

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Write today for prices and particulars

CROWN FRUIT AND EXTRACT CO., Inc. 418-420 W. BROADWAY **NEW YORK CITY**



Ko-Racas—the business builder

KO-RACAS converts just plain chocolate ice cream into simply delicious chocolate ice cream. It tastes 100% richer and leaves that delightful chocolaty aftertaste.

Ko-Racas is so simple, so inexpensive and so profitable, that it is a mistake in business judgment for any maker of ice cream to be without it.

Ko-Racus makes them say: "Have another!"



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Write for Booklet "VANILLA"

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VANILLA AND ALL OTHER FLAVORS AND EMULSIONS

Atlas Certified and Atlas Vegetable Colors and No. 40 Carmine

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First Producers of Certified Colors

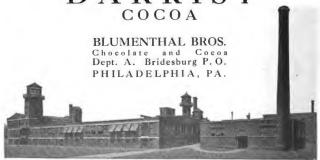
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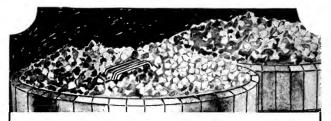
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to make a good sized batch of ice cream in the best and most economical way and prove to your own satisfaction that you can save money, make trade and gain time by using

"DARKIST"



COME SEE US SOMBTIME, YOU'LL BE MORE THAN WELCOME



ORANGE-CRUSH LEMON-CRUSH and LIME-CRUSH Ice Creams and Sherbets

Remarkable! That's the word that describes the success of these new ice cream flavors. The public awars them, just as it wanted the "Crushes' in drink form. Folks like the appetizing colors, the delicious fruity flavors are how by first because the flavors are new in ice cream. They keep on buying because of surpassing quality and extra deliciousness.

lee cream made with the "Crushes" is uniform in flavor and color. Fine for cuse in information of the color of the color of the run or turn to syrup; do not freeze out; not affected by long storage at low temperature. The "Crushes" are without equal for Ices, Frozen Custards, Sherbets, Mousse, Parfait, Frappe and Punches.

A firm in Pittsburgh, Penna, is so well pleased with sales of Orange-Crust Meeter Cream that they feature it as their leader. The oldest ice cream makers in Bridgeport. Connecticut, say these are the finest Playors they ever had. The second order from a Cincinnati firm was for 200 cases of Compound.

Best Profits

Ice Cream flavored with the "Crushes" will pay you bigger profits than will any other high-grade cream you can sell. Foresighted manufacturers are proving this in their own plants. You can do the same.

When you manufacture Orange-Crush ne Crush and Lime-Crush lec Crush may you connect your business with the tremendous advertising campaigns that he mendous advertising campaigns that he made the "Crushes" the best sellers of all fruit drinks. This year's tremendous advertising on the drinks will be a wonderful help to your ice cream sales. In addition there will be a special ice cream campaign.

Right now is your time to arrange for manufacturing these money-makers in your territory. For information about prices, profits, selling helps and exclusive rights, fill out and mail this coupon.

SIGN	V A	ND	SEND	THIS	COUPON	NO
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Send us, without obligation, details regarding Ward's Orange-Crush, Lemon-Crush and Lime-Crush Compounds for flavoring Ice Cream, Sherbet, etc.

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Real Standardization

IT is only by long years of painstaking work that a manufacturer, devoting his whole time and thought to the making of one essential product, can eventually give to his finished article, day after day and year after year, a uniformity of quality and finish that can properly be termed Standardization.

ESSEX Gelatine is brought to such a standard of excellence in purity and in uniformity of grading, of strength, and of working properties, as to be rightly termed *Standardized*.

NOTHING used in the formula of an ice cream batch is more essential to the making of uniform body and texture than an assured uniformity in the gelatine stabilizer.

The added cost necessary to bring this much desired result into ESSEX products is more than justified by the high degree of service its many consumer friends receive through its use season after season.



ESSEX GELATINE COMPANY

Manufacturers

BOSTON, MASSACHUSETTS

Branch Offices and Warehouses

PHILADELPHIA

NEW YORK

CHICAGO

SAN FRANCISCO

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CRYSTAL GELATINE

IN PACKAGE OR IN BULK

The most satisfactory stabilizer that can be used. Made in the largest and best equipped gelatine plant in America. Free from injurious chemicals or other impurities. A standard product most economical in the long run.

If you are particular—Specify CRYSTAL GELATINE.

CRYSTAL GELATINE COMPANY

121 Beverly St., Boston, Mass.

New York Philadelphia

indelphia Chicago

St. Louis San Francisco



Fetablished 187

Gelatine is the most efficient of all stabilizers for Ice Cream

WHITTEN'S GELATINES

Are Standard

Guaranteed to Comply with all National and State Pure Food Laws

STRENGTH, PURITY AND UNIFORMITY GUARANTEED

MANUFACTURED BY

J. O. WHITTEN COMPANY

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DELFT-The World's Best Food Gelatine

HAROLD A. SINCLAIR

160 BROADWAY NEW YORK

Some of the REASONS WHY you will want DELFT GELATINES

LOWEST in BACTERIA

No Objectionable Odor to Overcome

Requires Less 'Flavor to a Batch

Perfect Standardization

Purest as analyzed by the American Official Method

FREE OF SULPHUR DIOXIDE "Price is a relative term—quality always a concrete fact."

EVERY one of the "Reasons Why" in the column on the left has been proved by actual test. In buying Delft Gelatine, you are assured of

QUALITY BEYOND QUESTION ECONOMY WITHOUT EQUIVOCATION



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How to Make Ice Cream

We are new to you, but experienced in the manufacture of High Grade Ice Cream Gelatine, and are anxious to prove our worth.

Our Gelatine complies fully with all State and Federal Pure Food Laws.

Its use insures good texture and a smooth cream.

We guarantee Uniformity, Purity, Service, and Price.

To Prove This, IS:

Only possible by giving us an opportunity to demonstrate our product, by placing a trial order with us.

Or, if you will send a sample of your present supply, we will match same, and send you a duplicate article.

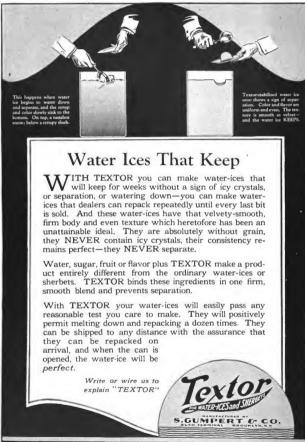
Send your order today.

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ATLANTIC GELATINE CO., Hill St., Woburn, Mass.

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RIPPEY'S Powdered Foamoline

TRADE - MARK REGISTERED

Specially Prepared

For Manufacturers

ICE CREAM, Sherbets,

FruitFrosts

Water Ices

that remoth, appearance A an emeh admin lorers of fee and aerentual risk, erramy No Head Eggs require you a l mmix Ripp Powde Foamowith sugar with sugar w

Powdered Foamolin with th sugar whill dry, add you cream or mill and it i ready for th Freezer,

FOR A LIMITED TIME WE WILL SEND BY MAIL, POST-AGE PAID, Pall % pound on receipt of 25c. Also our Formulas for making lee Creems, Sherbets, Fruit Froats, Water less. Soda Water Syrup from Canned Fruits, Mailed Free on receipt of Fame and address. Caution: Rippey's Powdered Fameline is packed in one pound becset with registered trade-mark and signature of William Rippey on every box. Never sold in bulk.

WILLIAM RIPPEY

No. 108 E. Second Street

CINCINNATI. O.

"TALBO"

THE PERFECT STABILIZER
FOR ICE CREAM

TRIED, APPROVED AND USED BY THE ICE CREAM TRADE FOR THE PAST FIVE YEARS

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THE PUREST OF PURE GUM DIRECT FROM MILLERS TO CONSUMERS

WRITE US

F. E. RICHARDSON & CO.

132 NASSAU STREET

NEW YORK CITY

Time To Buy

Mansfields

Milk Products

We Are Manufacturers

OI

No. 10 size Evaporated Milk and Barrel Packed, Sweetened Full Cream Condensed Milk; SweetenedSkimCondensed Milk

LET US HAVE YOUR 1921 BUSINESS
PACKED AND SHIPPED FROM

FRED. C. MANSFIELD CO.

Johnson Creek, Wis.

We Make Prompt Shipments of

Plain Condensed Milk

Concentrated Milk

Sweet Cream

Barreled Sweetened Condensed Milk

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OVER 2000
ICE CREAM
MANUFACTURERS
REGULARLY USE
GUMPERT'S
ICE CREAM
IMPROVER

S.GUMPERT & CO. Brooklyn. New York









he NEW MCLAREN REAL CONE CAKE CONE FULLY PROTECTED BY UNITED STATUS MILENS THE POLICY PROTECTED BY UNITED STATUS

In this New McLaren "Real Cake" Cone we offer the trade a sugar-sweetened article that is in a class by itself.

It is scientifically designed to ship with a minimum amount of breakage, is distinctive in appearance, and at the same time possesses the superior cating qualities that have always characterized McLaren's Ice Cream Cones.

EXCLUSIVE FEATURES

1 — Smoothly Moulded Ring Around Top.

Strengthens top of cone.

Prevents breakage when filling with ice

Improves appearance.

2—The Name "McLAREN" Moulded in Rim of Cone.

Prevents imitation. Guarantees quality.

3-Breakage Protection Ring.

Prevents wedging action of cones in shipping.

Keeps them from splitting and sticking together.

Strengthens top of cone.

(Illustration shows how cones rest entirely on this ring. Walls of cones do not touch.)

This new Cone is the result of years of study and the investment of many thousands of dollars. The manufacturers have aimed to make the very best cake cone possible, and at the same time keep the price within easy reach of every retail dealer.

Enterprising jobbers will be the first to show this new product in their territories. It is sure to be a winner for next season. Write for samples and very low introductory price.

MELAREN PRODUCTS COMPANY



Western Distributing Station, Kansas City, Mo.



The Reason for Cerelose

Successful ice cream manufacturers use Cerelose in conjunction with cane sugar, because Cerelose emphasizes the richness of the butter fat.

Butter fat is not only the most expensive item in ice cream making but the most important in relation to maintaining high quality.

Ice Cream manufatcurers, in this fact alone, can see why Cerelose is now being preferred everywhere.

Higher digestibility will be given to your ice cream with the help of Cerelose. The flavor and texture will show a decided improvement.

Cerelose sells for several cents less per pound than cane sugar.

CORN PRODUCTS REFINING COMPANY

17 Battery Place, New York City .

Note:-Formula cheerfully furnished upon request,

CONES

That Sell Ice Cream

We have added a New Cake Cone to our 1921 line, which is the acme of Flavor, Color, Crispness, and Shipping Quality. Years of experience as Bakers and Ice Cream Makers are reflected in the Big Repeaters, so called because they repeat wherever sold. Our facilities enable us to give the best of service. Secure our Catalog and Prices.

Cone Department, Cincinnati, Ohio
The French Bros.-Bauer Co.



The Grand Playids





Much of Your Success Next Season Will Depend on Your Choice and Supply of Ice Cream Cabinets



If there is any one thing the history of the ice cream cabinet business emphasizes, it is the value of anticipating requirements far in advance. From the standpoint of profits, and the service you will be able to render your customers now, right now, is the most opportune time to settle the cabinet proposition for next season.

If you are not familiar with the Grand Rapids Line this is the time to send for the catalog. It will show you why such a big percentage of the prominent ice cream manufacturers specify Grand Rapids Cabinets year after year. It will show you how to practice true economy in this department of your business.

The importance of immediate action must be stressed. Take up your requirements with us at once.

Grand Rapids Cabinet Company

Successors to CHOCOLATE COOLER COMPANY

80-84 Alabama St., N. W., Grand Rapids, Mich.

New England Sales Office and Warehouse Merrow Bros., Inc. 44 N. Market St., Boston, Masa South Eastern Sales Office and Warehouse Cherry-Bassett Co. 33 So, Charles St., Baitimore, Md.

North Western Sales Office and Warehouse A. C. Black 545 Lumber Exchange, Minneapolis, Minn

The C. Nelson Ice Cream Cabinets (Patented)

C. NELSON BRICK CABINET
 Patented May 6, 1906



42 QT. BRICK CABINET WITH ICE RAIL. Patents, May 8, 1906; Sept. 9, 1919





"Confessed the best when put to test"

The C. Nelson Patented Ice Cream Cabinets are especially adapted to Hot Climates—South America, Honolulu, Philippines, Cuba and all Southern States, where others fail.

We've Got It On Them All

Because We Are:

- 1st. Specialists in the manufacture of Ice Cream Cabinets.
- 2nd. Have had 30 years' actual experience in the manufacture and keeping of Ice Cream, from which practical experience the Nelson Cabinet was evolved.
- 3rd. Nelson Cabinets are constructed of California Red Wood and White Cedar. Both sanitary and everlasting.
- 4th. For this reason they are proof against Rust, Brine, Leaks and Decay.
- 5th. They are Insulated with Granulated Cork, the best non-conductor of heat and cold known.
- 6th. They will save their cost in three months' service.
- 7th. They will keep Ice Cream in perfect condition 24 to 36 hours with one packing of Ice and Salt.
- 8th. They will last a lifetime.
- 9th. We manufacture Ice Cream Cabinets exclusively, and build but one grade—This we guarantee.

The 42-quart brick cabinet has a two-compartment container, thus giving the advantage of a double cabinet with single ice space,

ATTENTION

Responsible parties (particularly wholesale ice cream dealers) may order from 1 to 100 Nelson cabinets, place them in practical use, and after 30 days, if not entirely satisfactory, return at our expense for freight both ways.

CATALOGUE AND PRICES UPON REQUEST

C. Nelson Manufacturing Co.





Ice Cream Cabinets
es that take into consideration the exact
cream Maker—and built of materials
strength and durability for every dollar
en name "Stout" implies.
for Stout literature
rices before you buy.

TE CO., Des Plaines, Ill. are designed on principles that take into consideration the exact requirements of the Ice Cream Maker-and built of materials that will assure greatest strength and durability for every dollar invested. They are all the name "Stout" implies.

Write for Stout literature and prices before you buy.

STOUT CRATE CO., Des Plaines, Ill.

Brooks Cabinet



Our BRICK CABINETS, made entirely of wood, without inner or outer metal lining, GUARANTEED NOT TO LEAK, Let us tell you all about them and our 1, 2, 3 and 4 compartment cabinets,

> BROOKS CABINET COMPANY 1000 Block W. 37th St., Norfolk, Va.

CABINETS

"Built right, price right, ARE RIGHT." "NO EXPERIMENTING WITH OUR CABINETS."



WE HAVE SPECIALIZED IN BUILD-ING ICE CREAM CABINETS FOR 15 YEARS, AND KNOW WHAT THE TRADE DEMANDS.

Before placing orders elsewhere WRITE FOR PRICE LIST AND DISCOUNTS.

HENRY SHULTZ

Office and Factory 24-26 Cherry Street, New York City

Economy Ice Cream Cabinets

Economical—Efficient—Substantial

Most economical in use of ice—most efficient in preserving quality of cream—substantial construction and absolute insulation throughout. Most approved design and finish. Made in one to four compartment—sizes twelve and twenty quart. Either metal-lined or in tub cabinet.

A Word to the Ice Cream Manufacturer

Anticipate your requirements for the coming year. Place your order now and assure yourself of a complete supply of cabinets with which to meet the demands of your customers. Bear in mind: the sooner you order, the more promptly we can ship.

Write for prices and particulars.

Homer Manufacturing Company Homer City Pa.



ICE CREAM LONGWEAR CABINETS

The Best That Money Can Buy

MADE 1N ALL SIZES one to four compartment bulk, brick cabinets, combination cabinets.

We use exclusively genuine Virginia white cedar tubs of our own make in our cabinets, which are watertight; also superior insulation and specially designed. All brass drains which will not leak but last forever.



DESCRIPTIVE FOLDER AND PRICE LIST UPON REQUEST

Order Now and Avoid Delays in Late Shipments

We make only one grade and that the best. Each cabinet carries our guarantee. Responsible parties may order our cabinets on approval and if not as represented or not found satisfactory return and we will pay transportation expense.



Genuine Virginia White Cedar and Cypress Ice Cream Packing Tubs and Pails

All Styles and Sizes.—Extra heavy and strong bottom construction. Many tests have proven Genuine Virginia White Cedar and Tide-Water Cypress the most resistant woods to the destructive action of salt water—both woods defy decay. Beware of so-called white cedar and inferior cypress. Demand the genuine.

Write for prices on your requirements for the coming season

MANUFACTURED BY

VIRGINIA TUB COMPANY

Bristol - Virginia

Easter Specials

Cassell Center Molds

For EASTER SUNDAY-Mar., 27th,



FOR EASTER SUNDAY

In addition to the Egg we have The Star of Bethlehem

Easter, or Passion Cross

Any of these \$1.35 each This is an early Easter, so order NOW through your Jobber or

W. W. CASSELL, Patentee

Ice Cream Decorations

featuring

EASTER and WEDDINGS LEAVES, W/STEM-LACE PAPERS FANCY PAPER CASES
ICE CREAM MOULDS
(Imported and Domestic)

IMPORTED FRUITS, PULPS, JUICES,

SCHALL & CO.

16-18-20 W. Broadway NEW YORK

Ice Cream Cabinets

The special construction of cabinets made by us insures durability and long life under all conditions.

THE PRICE IS REASONABLE

Send for Price List

American Retinning Co. 819-23 N. Lawrence St., PHILADELPHIA, Pa

Northey Cabinets



Mahogany Finish For Sale by All Legitimate Dairy Supply Houses

NORTHEY MFG. CO.

Waterloo, Iowa.

Insulation is the Thing!



The Test of a Good Cabinet Is It's Insulation"

Schroeder Perfection Cabinets

Stand the test because they are built with this principle as an ideal

On what basis do you buy your cabinets?

"Insulation is the thing"

JOHN SCHROEDER LUMBER (O.

"A Dosen Cabinets or a Dosen Carloads" WALNUT ST BRIDGE





ICE CREAM



The Most Direct Form of Advertising Appeal is the

DISPLAY SIGN

Establish prestige for your product. Impress the name, brand or slogan of your Ice Cream upon the eye and mind of the public. You can do this most effectively, and thus favorably influence your Dealer's trade, with

The Burdick-Garrison Co's Signs

We manufacture signs of all kinds, colors and descriptions, on Metal, Muslin, Cardboard and other materials suitable for both out-door and in-store display; also Window Displays, Posters and Feature Advertising in colors, in great variety.

Write promptly for catalog and full particulars

The BURDICK-GARRISON COMPANY

Two Twenty five Tourth Avenue New York

Advertising Specialists to the Ice Cream Manufacturer

THE NATIONAL DISH



THE larger ice cream manufacturers throughout the country have already made provision for the bulk of their basic supplies for the coming busy season. The same men who, year after year, have been the leaders in their industry have realized the same necessity in 1921 of insuring their supply of manufacturing and marketing essentials well ahead. The return of a sound prosperity is being noted, and this, and the warm weather now soon due, are bound to make themselves felt in a bigger demand for ice cream. To insure their ability to meet it those manufacturers who have not yet ordered machinery, equipment and supplies to be needed this Summer should do so without any further delay.



Safety to the Buyer through the Fair Practices Code



The Association of Ice Cream Supply Men
1328 BROADWAY, NEW YORK

Your Money Goes Further with Mathews



- (a) You deal directly with the largest firm of creators and manufacturers of ice cream publicity in the world. There is no Middle-man's profit between. No Middle-man's agents or jobber's profits, no costly lack of co-ordination between your organization and ours.
- (b) Our plant operates "98½ per cent efficient" night and day to meet the demand.
- (c) Bigger volume and lower overhead have made it possible to keep our prices nearly down to the level of five years ago, yet the quality of our products and our service have been maintained and improved.



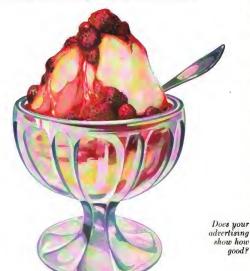
FREDERICK C. MATHEWS COMPANY "SERVANTS TO THE DAIRY INDUSTRY"

P. O. BOX 834 DETROIT, MICH.

This insert was produced complete by the Frederick C. Mathews Company

Cut Out This Mathews Page

Study and Compare it at Your Leisure



You make rery good Ice Cream

ART Experts and Ice Cream Men have told us that this is the finest reproduction of a Strawberry Sundae they have ever seen. Study it and see if you don't agree with this opinion.

SEND A MEMO TODAY stating approximately the time at which one of our representatives should see you. Let him explain the method of advertising the most progressive ice cream manufacturers will use this year to make their sales bigger than ever before.



FREDERICK C. MATHEWS COMPANY
"SERVANTS TO THE DAIRY INDUSTRY"

P. O. BOX 834 DETROIT, MICH.

This insert was produced complete by the Frederick C. Mathews Company

WHITE PARA-PARCH



We claim this filled stock is the most excellent Ice Cream Paper manufactured.

Its moisture and air resistance is unparalleled.

It is freely removed from the cream, is beautiful in shade and texture and 100% pure. It also is most economical.

Let us ship you a trial lot and convince you.

We furnish all sizes: squares and circles, plain and printed.

Made solely by

The Henle Paper Manufacturing Co., Inc. 535-545 EAST 79th STREET, NEW YORK

A "MAKE IT PAY" IDEA

If a pleased customer is your best advertisement, why lose the advertisement nine times out of ten?

Tie Your Name to Your Product



Our tin ice cream spoons with your name stamped in the bandle cost no more—probably less—than you pay for the plain kind, and they tell the customer who pleased him ten times out of ten.

WRITE FOR PRICES AND A SAMPLE

Our New Ice Cream Catalogue Will be Mailed Upon Request
Freezers; tools; cans and carry-outs; brick



moulds; brick tanks; tubs; buckets; and a hundred and one other things on which you can make it pay to let us quote you. Weissue Catalogues of Baker; Soels and Vensils and Confectioner's Sools and Vensils

THE MAAGE CO.

509-511 W. LOMBARD ST., BALTIMORE, MD.



THE GREAT



THE PERFECT ICE CREAM FLAVOR

PRICES

For Immediate Shipment or 1921 Delivery

PER GAL. In Five Gallon Kegs \$4.00 In Ten Gallon Kegs 3.85 In Fifteen Gallon Kegs . 3.75 In Twenty Gallon Kegs . to try --3.70 The Great "2A" In Half Barrels 3.65 In Barrels . 3.50

course you are now making plans to take care of the big business we all expect this year, and contracting for equipment and supplies of various kinds.

Don't overlook the most important item -- the FLA VOR.

We suggest that right now -- before the rush starts is an excellent time

MASSEY & MASSEY COMPANY

EXPERT VANILLA CHEMISTS

1214-1216 Webster Avenue

CHICAGO, U. S. A.

THE ICE CREAM TRADE JOURNAL

Vol. XVII

NEW YORK, MARCH, 1921

No. 3

NEW ENGLAND'S ELEVENTH ANNUAL CONVENTION

Ice Cream Men of Northeastern States Convene at New Haven to Discuss Problems Confronting the Industry

Two hundred or more ice cream manufacturers and supply men gathered at the Hotel Garde, New Haven, Comn., February 15 and 16, to attend the eleventh annual convention of the New England Association of Ice Cream Manufacturers. Every seat in the convention hall was occupied when John Semon, president of the association, called the first session to order at 2 p. m. on the fifteenth.

After making a short introductory address, President Semon introduced David E. Fitzgerald, Mayor of New Haven, who welcomed the ice cream manufacturers.

Secretary G. W. Kenison's report showed that the association had enjoyed a very successful and progressive year. According to his report ten new active members and eleven new associate members were added during the year, bringing the total membership of the association to 134. Treasurer W. H. Suow read the financial report of the association.

The president read a number of communications of greetings to the association from different parts of the country after which he called on William F. Luick, Milwauker, Wis. Mr. Luick in a short address, among other things, said that the fellowship created through association work was worth more to him than the money made in his business.

The meeting was then adjourned.

The second session of the convention was called to order at 10:30 a. m. on the sixteenth by the President who, after making a few announcements, requested discussion on the subject, "Should the price of ice cream be lower or remain where it is?"

The discussion of this subject showed that while practically everyone present believed that some reduction should be made nevertheless the amount of that reduction depended wholly on local conditions. It was suggested that manufacturers in a local territory should consider their costs and then reduce their prices accordingly and further see that this reduction was carried through to the consumers of ice cream. At the close of the discussion the question, "Should the price of ice cream be lowered?" received a unanimous affirmative vote and at the

suggestion of Samuel Dolby, Providence, the amount of reduction was left to the local manufacturers.

"Should weekly charge be set where icing is done, and what should it be?" was the next subject for discussion.

Watter Comfort, Jr., Roxbury, Mass, said that his company did not make a charge for icing but that it is included in the wholesale price—20 cents a gallon more being charged on delivery and icing over the shipping price.

Charles G. Morris, New Haven, agreed with Mr. Comfort in that he didn't believe it desirable to make a separate charge for icing.

E. V. H. Gnardenier, Hartford, Conn., told of his experience in icing stating that he found it takes from 16 to 28 pounds of ice to the gallon. He said icing up had increased his company's gallonage and it takes a lot of work out of the factory. Some of his dealers, he said, would not go back to tub delivery while others don't want icing, so they deliver ice cream both ways.

Opening up the discussion, "Should cabinets be loaned or charged for?" J. N. Grudy, Lawrence. Mass., said his company did not charge for cabinets but received ten cents additional per gallon where they installed cabinets.

Frank Kronenberg, Cambridge, Mass, advocated making the dealer pay for his cabinet. Then he won't be always wanting more flavors and the dealers will take better care of cabinets, believes Mr. Kronenberg.

Mr. Kennison said his dealers generally were unwilling to pay enough to get a good cabinet and therefore they had established the custom of installing a modern cabinet and including the cost in the price of the sice cream.

"Should brick business be pushed hard, should a higher price per gallon be charged for bricks and should a different price be charged for quarts and pints?" was the next subject discussed.

W. J. Sheehan, N. Arlington, Mass., related his experience in handling bricks, stating that he was formerly in the candy business and when he went into the ice cream business he followed the same package, namely, three wrappers, the outside one sealed. He found that the labor involved in wrapping could not be taken care of in a 20 cent difference between bulk and brick. Mr. Sheehan said it would be necessary either to increase the difference between bulk and brick prices or improve the methods of wrapping.

The Chairman requested Mr. Luick to relate his experience in manufacturing and selling brick ice cream.

"The future of the ice cream industry lies in the quality of the product," said Mr. Luick. "Everyone agrees with us that we have a food product—and it is up to the manufacturers." Mr. Luick first explained the cost system used in his plant using charts which showed the relative costs of different operations in his plant covering a number of years. He devoted the remainder of his address to brick ice cream."

After thanking Mr. Luick for his address, the Chairman read a number of telegrams extending greetings to the Association.

The meeting was adjourned.

Secretary Kennison lead the opening discussion of the afternoon session the subject being, "The new Massachusetts law regarding ice cream cartons." He showed the many disadvantages to the ice cream manufacturers of the proposed Massachusetts house bill No. 1155 which, among other things, states that all package goods shall be sealed and quantity, grade, date of packing and the name and address of packer and sealer printed on the package.

W. A. Cardy, Chelsea, Mass., said he recently had a talk with Mr. Merideth, Massachusetts State Director of Standards, who said he could see no way his department could prosecute under the present law, if the ice cream men sold the small package as a 10 cent box and not as a definite quantity.

Dr. W. L. Wright, Fulton, N. Y., said that a wave was going over the country in the minds of the authorities in charge of weights and measures, all believing that they should get busy and do something. Dr. Wright further stated that Mr. Merideth was shutting out certain convenient packages in Massachusetts because of their size and shape and as the present law reads in that state it will not permit the manufacture of certain convenient packages at a reasonable out.

The Chairman introduced Chas. W. Hoyt, New York, N. Y., who spoke on the subject of cooperative advertising, showing with the aid of a comprehensive set of charts what has been done in other industries through cooperative advertising.

Prof. W. P. B. Lockwood, at the request of the chairman, told of the working of the North East Dairy and Food Council. He showed how the Boston milk campaign from 1916 to 1918 had increased the consumption of milk in the Boston district 28 per cent. on a rising price of 888 per cent. He said that the Council, through boards of health, school boards, county agents and other organizations, was talking dairy products, including ice cream.

Dr. Stanley F. Osborn, of the Connecticut Board of Health, gave a short talk.

The Chairman requested Chas. G. Morris, as chairman of the committee on legislation, to give his report. After giving a synopsis of the work of the National Association Tax Committee of which he is a member, Mr. Morris presented the following resolutions which, after a short discussion, were

We, the New England Ice Cream Manufacturers Association, in annual meeting assembled, heartily approve and affirm the position which the Chamber of Commerce of the United States has taken in their opposition to certain bills recently introduced into Congress. Their position is stated as follows: "We object in principle to legislation which gives to government such control, either through bureaus, commissions, licenses or other agencies as will in effect amount to government operation of industry."

Furthermore, this Association objects to and opposes development of legislation in Connecticut, which grants to certain commissions authority to make rules and regulations which apply to private businesses with all the force of penal statutes. Such grants of power to individuals or to small groups of public officers are not in consonance with the principle of legislation by the elected representatives of all the people, which is one of the bulwarks of American freedom,

Whereas, we know that the final payment of praestically every tax which is laid on our business, whether federal, state or local is either shifted to the consumer or absorbed by the seller as the competitive condition of the market may determine from time to time; and

Whereas, its place of original payment rarely has anything to do with its source of final payment; and Whereas, this is equally true of the corporate or business tax, the excess profits tax and every other form of taxation with the single exception of a

form of taxation with the single exception of a sales tax or a stamp tax which the law requires the final consuner to pay so that the seller cannot absorb it; and Whereas, we realize that following a war, heavy

Whereas, we realize that following a war, heavy taxation is necessary and must loyally be borne by all the members of the community alike; and Whereas, that form of tax which is the most

whereas, that form of tax which is the most certain in amount, the most easily collected and the most easily determined by the tax payer is the least burdensome;

Now, therefore, the New England Ice Cream Manufacturers Association in its annual conference assembled, urges the Congress to repeal at the earliest possible moment the complicated, burdensome and uncertain excess profits tax law; furthermore, we uncertain excess profits tax taw; turnermore, we urge the Congress to repeal the excise tax on retail sales of ice cream which has proven in practice to he injust, discriminatory and so immensely expensive to collect in full that multitudes of petty transactions fail to be reported and many opportunities for intentional evasion exist: furthermore, we urge the Congress to recover so much revenue as may be the fair share of this industry after such repeals become effective from a sales tax levied on the sale of our product at the point where manufacture is completed and it becomes a salable manufactured product. Such point is easily determined, the amount of the tax could be certainly known and evasion would be difficult if no exemptions were granted, while the collection would be made from sufficiently concentrated sources to produce a maximum of revenue at a minimum cost of collection.

Mr. Morris also made a short talk urging all

[&]quot;An article by Mr. Luick giving the methods of making brick ice cream used in his factory was published in December, 1920, issue of The Ice Cream Trade Journal.—Editor.

New England ice cream manufacturers to join the National Association.

The Chairman called on Oliver S. Jordan, President of The Association of lee Cream Supply Men, who talked to the assembled ice cream men. The ice cream industry is a wheel within a wheel and the National Association of Ice Cream Manufacturers is the heart of the industry, said Mr. Jordan, He further said that the National Association's interests and the supply men's interests are identical and every man should be a salesman for the National Association and help get more of the some 3,500 manufacturers into the association.

By a majority vote of those present it was decided to consider the proposed cooperative advertissing campaign at an executive committee meeting to be called by the President.

At the request of the Chairman, the nominating committee reported the following officers for the coming year, all of whom were unanimously elected:

President, Samuel Dolby, Providence, R. I. Vice-president, H. B. Slingerland, Burlington, Vt.

Treasurer, W. H. Snow, Somerville, Mass. Secretary, G. W. Kenison, Lawrence, Mass.

Executive Committee: Walter R. Comfort, Jr., Roxhury, Mass.; Harry Wadham, Bridgeport, Conn.; F. E. McIntosh, Burlington, Vt.; E. W. Park, Lynn, Mass.; L. M. Theroux, Taunton, Mass.; J. G. Turnbull, Orleans, Vt.; C. G. Morris, New Haven, Conn., and John Semon, member board of directors, National Association.

Mr. Semon made a short farewell address in which be thanked the members for their assistance during the past year. He also urged every member of the New England Association to join the National Association. A rising vote was given the retiring President thanking him for the able manner in which he carried on the Association's work.

After a short inaugural address by Mr. Dolby, the newly elected President adjourned the convention.

Practically every one present made the inspection trip to the New Haven ice cream plants after the first session on Tuesday. Receptions were pled at the plants of the John Semon Ice Cream Co. and the New Haven Dairy Co. Later in the evening the ice cream men assembled at a local hotel where a buffer luncheon was served and a vaudeville entertainment was staged through the courtesy of the Connecticut ice cream manufacturers. Moving pictures were also shown, including a portrayal of Mr. Semon's picuic to the children of New Haven commemorating his start in the ice cream business.

The annual banquet was held Wednesday evening at the Hotel Garde. The retiring President acted as toastmaster and at his right sat Mayor Fitzgerald who delivered a hearty official greeting from New Haven to its guests.

Postmaster Phillip Troup included in his talk, the following tribute to ice cream, entitled, "King Ice Cream":

This feast of reason and flow of soul surely should not end without its tribute to the great silent host of this happy occasion. The realms of fancy have

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been filled to overflowing with poetic praise of the cup that cheers and the weed that solaces; but consider for a moment the virtues of one that always comes laden to us with all the joy and gladness of sparkling wine and all the soothing comfort of a good smoke—yet exacting none of their penalties.

No tongue that has partaken of his rich bounty will deny his rare delights. Our good friend is comparatively speaking, very young; yet fabled forece and imperial Rome in all their glory cabled not boast a better art than his,—the art of bringing relief and refreshment to teeming millions.

From every cheerful hillside and pastured valley where the lowing herd homeward wends its weary way, from that feathery domain, where proud Chanticleer heralds the dawn of each new day, he has drawn his inspiration and his strength. Every vine and fruit tree; indeed, all the sweetness of mother earth gives a savor and flavor to his splendid soul.

In him are strangely mixed all seasons, the vigor of winter, the liveliness of springtime, the balmy joys of summer, the pep of autumnal days.

Fvery age, race and sex calls him boom companion and every clime claims him for its very own. Would you awaken the sound of rollicking laughter from the cheery lips of childhood or drive dul care from the wrinkled brow of age, you have only to call upon our friend.

At all times he is seasonable, in all places serviceable. In the happy home circle he is ever welcome. Cupid ranks him first and foremost among his tried and true lieutenants.

In the sick room, where fever flirts with death, he is a veritable ministering angel, the doctor's and the nurse's surest aid. At the festive board he crowns all with plenty and with satisfaction.

In a thousand artistic forms he makes his presence known, in countless ways he aids mankind, proving again the Miltonian line that "they also serve who simply stand and wait."

So we hail him, this bountiful brother of good cheer. Weep as you will at the dolleful date of poor old John Barleycorn, find solace if you can by worship at the shrine of the Little God Nicotine; tonight I know you will join me in pledging a long life to one who is as good and great as either of them, this prince of every feast and function, this Emperor of Toyland, God bless him, King Ice Cream.

Oliver S. Jordan, Charles G. Morris and Charles W. Hoyt made talks that were received with hearty applanse. Other prominent New Haven men also snoke.

Moving pictures of last fall's Atlantic City Exhibition completed the program of the evening.

MISSISSIPPI CONVENTION

The annual convention of the Mississipi lee Cream Manufacturers Association was held at Jackson, Miss., January 18 and 19, the manufacturers of the state almost as a whole being represented, with a goodly number of members from adjoining states being in attendance.

The convention was called to order promptly at 10:00 a. m., the 18th, by President W. A. Crawley, Minutes of the 1920 meeting were read and adopted. E. B. Hardy, secretary and treasurer of the Association, read his report, which was approved. The report showed the results of a very active campaign for membership and excellent work accomplished by the officers of the Association.

At the afternoon session a number of representa-

tives of supply firms discussed the raw material outlook for the season of 1921. The convention was addressed by the following members: W. A. Crawley, Clarksdale, Miss.; W. W. Campbell, Shreveport, La.; C. A. Kent, Kentwood, La.; E. H., Harris, Hattiesburg, Miss.; W. D. Seale, Jackson, Miss., and D. E. Cox, Jr., Columbus, Miss.

At the meeting, January 19, which was called to order at 10 a. m., resolutions were passed to make application for membership to the National Association of Ice Cream Manufacturers, and D. S. Cox, Jr., was appointed to represent the Association on the National Roard of Directors.

The following resolutions were unanimously adopted, being the report of a committee appointed to go into the matter with the State Board of Health, and matters for the betterment of the ice cream industry.

Resolved, that it is the desire of this association, collectively and individually to co-operate with the State Board of Health in its effortered with the State Board of Health in its effortered with the well and the cream supply of the State, and with this in view we pledge ourselves to use only the best and purselves of ingredients in the manufacture of our fee cream and sherbets and to make no ice cream containing less than 8 per cent. Butterfat as is required by the rules of the State Board of Health.

Resolved further, that we discourage the use of preserved fruits, syrups, etc., by dispensers of our goods in the preparation of "Sundaes" or other so-called fancy dishes with ice cream as a base, and insist on serving the goods as they come from the factory purely on their merit as palatable, wholesome and pure food.

Following a delightful luncheon tendered by the ice cream manufacturers of Jackson the convention met for afternoon session.

The following officers were elected: President, P. L. Farrell, Brookhaven, and secretary and treasurer, N. D. Brookshire, Meridian.

It was decided to hold the 1922 meeting in Jackson at the call of the President.

of the President.

-N. D. Brookshire, Sec.-Treas.

ILLINOIS SECTIONAL MEETINGS

The Illinois Association of Ice Cream Manufacturers held the following sectional meetings since the first of the year: Centralia, January 11; Litchfield, January 13; Decatur, January 25; Danville, January 27; Galesburg, February 1, and Rockford, February 8.

All these meetings were very largely attended and a great deal of interest was shown by the manufacturers in the varfous matters which came up for discussion, particularly those dealing with the probable supply of milk for the coming season and the ice situation.

Express rates and other maters of general interest were discussed at the different meetings.

The attendance varied from 22 to 48 firms at the meetings.

At the conclusion of the Rockford meeting the visiting manufacturers were entertained at a hanguet given by the Allen Ice Cream Co., with which firm our President, George R. Contright, is associated. The tables were beautifully decorated with flowers and souvenirs were distributed. After the hanguet a

theatre party was given, at the conclusion of which moving pictures of the Allen Ice Cream Co.'s plants at Rockford and Rochlelle were shown. These pictures—presenting Alen's Ice Cream as a food, not a fad—were exceedingly interesting, and the visiting manufacturers were a unit in extending their thanks and appreciation to Messrs. Bert M. Allen and George R. Courtright for the many courtesies shown.

N. LOEWENSTEIN, Secretary.

1921 DAIRY SHOW TO TWIN CITIES

The National Dairy Show of 1921 goes to Minnesota. The dates are October 8 to 15, inclusive.

A delegation of business men representing St. Paul and Minneapolis interests, came to Chicago to convey an invitation to the Executive Committee of the National Dairy Association to hold the 1921 show on the State Fair grounds of Minnesota, and the heartness of the invitation delivered by the men of the Twin Cities, coming as they said, with the endorsement of the whole Northwest, and the enthusiastic picture of dairy progress in the Northwest, left no alternative to the Committee other than to accept the invitation.

So it is now, "Everybody together for a big dairy inspiration meeting for 1921 in this wonderful dairy country."—National Dairy Show Publicity Dept.

OHIO ASSOCIATION MEETS

Stanley Ross of the Moores & Ross Ice Cream Co., Columbus, was elected president of the Ohio Association of Ice Cream Manufacturers at its annual convention held at the Hotel Deshler, Columbus, February 3 and 4, 1921. John Hemmer of the Hemmer Co., Zanesville, was named vice president, and J. H. Cline of the Cline Ice Cream Co., Athens, re-elected treasurer, and Arthur S. Burket, Columbus, re-elected secretary.

The association went on record as being opposed to substitution of cocoanut and other oils for butter fat in the manufacture of ice cream. A committee of ice cream manufacturers also conferred with a committee from the Ohio Dairymen's Association on the question of establishing an ice cream standard for Ohio.

MINN, HOLDS BUSINESS MEETING

A bill to increase the minimum limit of butter fat content of ice cream, which has been introduced in the State legislature, was condermed in a resolution by the Minnesota State Ice Cream Manufacturers' Association at a business meeting, Duluth, Minn. The meeting opened with a luncheon at noon.

S. A. Siehald, state food and dairy commissioner, in an address declared the measure would make ice cream a luxury and not a dainty, within the reach of every school child, as it now is.

A proposed measure to compel retailers to wash and keep clean all receptacles in which ice cream and milk is shipped from factories, was indorsed.

The board of directors was asked to invite the National Ice Cream Manufacturers' Association to hold its next convention in Minneapolis, J. E. Woolsey, Minneapolis, president of the Association, presided.

CAN ICE CREAM AS AN INDUSTRY BE ADVERTISED?

The Author Believes That Through Co-operative Advertising the Basic Market for Ice Cream Can Be Enlarged

> By Charles W. Hoyt President, Hovt's Service, Inc., New York, N. Y.

From an address delivered at the annual convention of the New England Association of Ice Cream Manufacturers

If somebody had asked me a month ago whether or not ice cream as an industry could be advertised. I would have said, with my somewhat broad knowledge of cooperative advertising, that it could be done. Today, after having devoted considerable time and study of the proposition. I would say most emphatically that ice cream as an industry opens a tremendous field for cooperative advertising. I do not know of any one industry into which I have ever looked to which I belteve there would be a larger or easier response to the power of cooperative advertising.

Before considering the ice cream industry specifically, let me bring to your attention a few fundamental axioms with reference to cooperative advertising. These axioms are taken from a recent address given by Don Francisco, the advertising manage of the California Fruit Growers' Exchange.

"In nearly every line, there is a lot of educational work that should be done by an industry as a whole rather than by the individual members." This applies very strongly to the ice cream industry. There is a lot of educational work to the consuming public which should be done by the industry as a whole rather than by the individual member. Advertising is for two purposes, one to change the habits of the people, and the other to give them a choice of brand. The duty of the individual members in the ice cream industry is to educate the people to a choice of brands; and the duty of the industry as a whole is to change the habits of people with reference to the amount of ice cream they should eat.

"Cooperative campaigns cannot trifle with details, They dive straight at fundamentals. The controlling motive is, The greatest good for the greatest number."

A third fundamental in connection with cooperative advertising that such advertising tends to enlarge, stimulate and improve the basic market. "Little energy within the cooperative advertising campaign is dissipated in transferring business from one concern to another. Great energy is devoted to the increase of business for everybody."

I am of the opinion that proper advertising by the ice cream industry could so change the buying habits of the public in regard to ice cream that the results would be such that the industry would be oversold for many years to come. Mr. Francisco said in his recent address, "Our hardest selling resistance does not always come from our competitors but from the public's general ignorance or lack of appreciation of our product and its use. Often our greatest opportunity for increasing sales lies in increasing the basic market-in educating the public demand."

Mr. Francisco says that California orange grow-

ers have never worried whether people ask for "Sunkist Oranges" or just "oranges." They have not tried especially to create a preference for "Sunkist." What has concerned them is whether people would eat enough oranges so that they could sell theirs at a profit. Some time ago, the paint manufacturers started a campaign known as the "Save the Surface" campaign. When they did this, the advertising took the educational work off the members' shoulders and left each free to push its own brand. And, in the case of the paint manufacturers, the cooperative action did the job more effectively than the members could have done it in an unorganized fashion.

The great opening in cooperative advertising is to enlarge the basic market. Let me give you the figures in connection with the California Associated Raisin Company. In 1913, the figures stood like this:

Produces Consume					:					•		:	140,000,000 110,000,000	Ibs.
Unsold													30,000,000	Ilos.

In other words, the raisin growers were producing 3,000,000 lbs. more raisins yearly than they were selling. Now, let us look at the figures for 1917:

> UnsoldNone.

In other words, during the space of four years, the sale of California raisins was increased 216,-000,000 lbs. per year, and what is more important no raisins were carried over. Another way to state it is to say that the average consumer was eating 3.26 pounds of raisins yearly, instead of only 1.1 pounds as before. The same thing has happened with the advertising of California walnuts, by the California Walnut Growers' Association. In 1913, the total annual consumption of walnuts in America was 29,000,000 pounds and in 1919, the total annual consumption was 85,000,000 pounds.

Twenty-seven years ago, when California shipped about 2,000,000 boxes of oranges a year, the growers thought they were overproducing. By 1904, they had pushed their annual sales up to 10,000,000 boxes, and the sales in 1919 were 18,000,000 boxes.

Another important consideration of the value of cooperative advertising is that it lowers the cost of selling. By attempting to develop this thought, which is obvious to those who have given the matter consideration, let me give you the figures as they relate to the California orange business. In 1905, the sales f. o. b. were \$7,124,377.00, and the percentage covering both the advertising and selling expenses or the exchange was 3.28 per cent. In 1919, the total sales were \$54,627,556, and the expense for advertising and selling was 2.01 per cent. I could

give similar figures of the other associations if there were time to do so.

Another important function of cooperative advertising for an industry is that it spreads the season, It is probably true that the bulk of the ice cream business has been done in the summer. No doubt, the individual advertising that has been done in the past has tended to equalize this somewhat and to produce a more uniform business. The results of other campaigns show that the peaks and valleys of sales in ice cream could be flattened out considerably, and the consumption spread over the year more uniformly. This could be quite largely controlled by the way that the advertising campaign was handled. There are a large number of examples of this as, for instance, the cranberry business. Cranberries were once only for Christmas or Thanksgiving turkey and that alone, but advertising has changed that for the cranberry man,

In the early days of advertising, the pioneers thought that the functions of the advertising which they did for their soap, their bath tubs, and their dentifrice was to take business from the other fellow. But they discovered, after advertising awhile that instead of taking business from the other fellow, they were creating new users and larger users of their product. Thus the bath tub man discoveed that instead of simply taking business from somebody else, that he was creating many new users of bath tubs. Consider the advertisers of phonographs. They might have supposed at the beginning that the function of their advertising was to take the business in phonographs that would go to the other man. But they have discovered that the more all of them advertised, the more business all of them do.

"So it is in the ice cream business. I suppose that the average family buys ice cream once a week, say for the Sunday meal. Now it is undoubtedly true that a proper amount of advertising of the right sort would gradually mold people into the thought that ice cream was a good and proper dessert to serve several times a week instead of once a week. Ice cream can be sold to the American people as a steady article of diet by the proper sort of cooperative advertisling. I believe that it is absolutely possible and commercially practical to double the amount of ice cream that the average family eats per week by means of cooperative advertising. Ice cream has been a feature on certain holidays, such as Christmas, Thanksgiving, Fourth of July and Easter. I believe that proper cooperative advertising could bring about several other weeks or days when ice cream would be used. I believe that an advertising week could be so staged that everybody would feel impelled to have ice cream on that particular week. I believe that a thought could be put over to the American people to the effect that on that particular day or during that particular week there should not be a child in the United States who did not have a dish of ice cream; that public spirited citizens could be induced to act on the thought that it is their duty to see to it that poor families as well as their own families were supplied with ice cream on that particular occasion. I have taken particularly for my viewpoint the New England states. In the New England states there are approximately 8.000,000 people.

This 8,000,000 people represent approximately 1,600,000 homes. If, as should be the case, every home in New England buys a quart of ice cream per week, then it means that each family or home consumes 13 gallons per year, and that means that in the New England States alone there should be consumed at the present time 20,800,000 gallons of ice cream. These figures are undoubtedly beyond what is consumed. Assuming, however, that it is the present consumption, let us see what a tax of one cent per gallon would give us for advertising within New England alone. There would be available the sum of \$208,000. Does anybody doubt for a minute that \$208,000 spent in advertising ice cream in New England could fail to at least double the business? If thereafter a tax of one cent per gallon were used for advertising, does anybody doubt but that within a reasonable time, just as it happens in other industries, the consumption in this section of the country would go to 40,000,000 gailons, and then on the basis of one cent per gallon, there would be available \$400,000. Now, I am not expecting at the moment that any such sum of moncy can be spent in New England, but I am absolutely confident that such an amount of ice cream could be sold in New England with such an appropriation.

I have been told by one of the officers of the New England Association that there are approximately 200,000,000 gallons of cream sold in the United States. If so, and if one cent per gallon were spent for the industry for advertising, there would be available \$2,000,000 for advertising the industry. Such a sum of money spent in advertising the ic cream business would enormously increase it. The results of such an expenditure made within even the first year and certainly within the limits of the second year would so far oversell those at present engaged in the industry that they would not each up for years.

It was my opinion that if statistics were taken of the sales of ice cream at present made by the manufacturers of New England, that a proper equitable investment could be made per gallon so that there would be available a sum of money perhaps amounting to \$100,000 which could be spent within the New England states to great advantage. Such a campaign, if carried on in New England would not even have the great advantage and flexibility of a national campaign.

If the ice cream manufacturers of the United States would tax themselves a certain amount per gallon, so that there was available the sum of even \$250,000, or even the sum of \$200,000, there could be carried on a wonderful campaign. Based on the present consumption of ice cream and on the supposition that all manufacturers went in, this would mean a tax of one-tenth of one cent per gallon. Let us assume, however, that it would not

be possible to get all in, and assume that everybody apid a fifth of a cent. There would then be available approximately \$200,000. The tax having once been set, should go along from year to year on the increasing amount sold, so that as the business grew, the results of the assessment would bring a larger volume of money for advertising purposes,

The possibilities of advertising ice cream as an industry through the use of the colored pages of the wonderful magazines, particularly the women's magazines and the general magazines are tremendous. Look at the advertisements in the big women's magazines like Ladies' Home Journal, Woman's Home Companion, Pictorial Review and Good Housekeeping. See the magnificent portrayals in colors of such wonderful desserts as raisin pie in the advertisements of the California Associated Raisin Co.

There are a few words of advice and caution necessary with reference to the matter of association advertising. Experience has shown those who have been connected with association advertising that these things are necessary. It is absolutely unwise for an association to start advertisements unless they are willing to decide to do it for a period of at least three years. If a manufacturer pledges himself to pay a certain amount per gallon, he should make that pledge for a period of three years. Another very important thing has to do with vesting the authority within the hands of two or three members. Lots of cooperative advertising has been ruined by having "too many fingers in the pic."

An association that contemplates advertising should have within its membership two or at the most three men who are big enough to give wise decisions and the decisions should be followed. It is necessary that these two or three strong men give their personal time and enthusiasm to the work, or else petty politics will disrupt or break down the campaign, Furthermore, the men who are going into this work should be hig enough to realize that they are going into cooperative advertising for the common good of the industry, and to realize that if the industry is bettered, the individual members will get their shares. Remember also that cooperative advertising will not make any weak manufacturer a strong one, but it gives the progressive, up to date, aggressive members additlonal opportunity to become bigger.

BUILDING EXPANSION AND THE DECLINING MARKET

Most Authorities Are of the Opinion That the 1919 Level Will Be About the Base of Decline in the Prices of Building Materials

> By William D. McCormick President, The McCormick Co., Pitteburg, Pa. From an address delivered at the annual convention of the Ohio Association of Ice Cream Manufacturers

If an ice cream manufacturer plans a business expansion, as a general rule, it means a building expansion. With commodity prices on the decline, it is difficult for an ice cream manufacturer, who has been putting off building since before the war, to decide definitely to go ahead with the long-needed building expansion.

As a general rule, one is thoroughly familiar with the market conditions surrounding the materials that go into the product lie is manufacturing. There are market conditions surrounding the materials used in building construction. They have lad their advances during the past four years as have all other commodities, and it, consequently, becomes difficult for those who have not analyzed the situation to determine just when these prices have reached a level, whereby one would be justified in going ahead with building expansion.

Will the cost of these building materials go down to the 1914 level? If not, just what year since then would be a better one for us to consider the right level? When you consider building costs, always remember that approximately 50 per cent, represents the building materials you will have to purchase.

Taking the year of 1914 as a basis or zero, the increase in price on building materials on January 1, 1919, was about 65 per cent. On the same basis, that

is considering 1914 or zero, building wages increased 35 per cent. From January 1, 1914, to January 1, 1919, the building situation did not show any alarming increase in buildings, 1918 being an exceptionally bad year for the bulding business.

Immediately after the war the first half of 1919 showed a tremendous spurt in building. Corresponding with the spurt of building in 1919, building materials rose to an increase of more than 165 per cent. over the 1914 level. Likewise wages showed an increase of 85 per cent. over 1914 level.

With increases of this sort the public soon decided that in such long-term investments as buildings it was not advisable to invest money in this manner. Consequently, since January 1, 1920, until the present time, we have seen a gradual decline from the peak of prices which occurred the first part of 1920, until today prices are very near the level of January 1, 1010

Outside of common labor, no noticeable decline in the price of wages has been apparent. It must be remembered that trade unions in the building business are very strongly organized. In the manufacturing area of the country, there has been some talk of open shop, but it is generally agreed that it will be extremely difficult to accomplish open shop in building trades in most localities. We conse

quently cannot see much decline in the price of wages in the building industry, and on the other hand, it must be remembered that they have not risen as high in proportion as building materials.

Most authorities are of the opinion that the 1919 level will be about the base of decline in the building materials. Few, if any, authorities believe that they will the opinion of the dollar is almost indicative of this, and when we consider that there was a rise in the year of 1919 of 95 per cent. over the base price of January 1, 1919, there has consequently been a decline of nearly 95 ner cent, since the first of lanuary, 1920.

I believe if the ice cream manufacturer will watch carefully such reports as given out by the Balson Statistical Organization at Wessley Hills, Mass., and institutions of similar nature, they can always become acquainted with the fluctuation of the building material market. The proper procedure is to have your plans ready to take advantage of prices of building materials. The manufacturer, who waits until building takes its spurt, will again see the rise in prices that have always gone with the rise in the volume of building toonstruction.

In other words, if you fail to take advantage of prices which past history shows has always accompanied an inactivity in the building market, you will have to pay the increase in cost that invariably lecomes part of building activity. Ice cream manufacturers should become better acquainted with these facts. It will mean a saving of money to them and when you consider a building is a long term investment, it is absolutely necessary that your building costs be to the minimum.

THE NATIONAL DAIRY COUNCIL

The following bulletin telling of the work of the National Dairy Council was recently received from M. O. Maughan, secretary of the Council:

The questions, "What is the National Dairy Council," and "What is its purpose," have been asked no small number of times. Some people think the Council an advertising agency; others a bureau of information, and others—well, they don't know.

Briefly stated, the National Dairy Council is an educational organization of the dairy industry, organized to do for this industry what the National Canners Association is doing for their industry, and the Paint Association for their industry, and what the Raisin Growers and other organizations have already done for the particular industry they represent.

And what are their organizations doing and what have they done?

The Canners Association is now busy educating people to a greater use of canned goods; they are getting people to use two cans of food where but one has previously been used, by advertising "The Mirabath Control of the property of the pro

has previously been used, by advertising "The Miracle of Your Table."

The Paint Association is creating a demand for more paint through their "Save the Surface and You Save All" campaign.

The raising rowers, though they need to advertise very little now, before prohibition in four years' time, increased the consumption of raisins 300 per cent. by conducting an educational publicity campaign of the proper kind.

Other organizations have done similar work. The orange growers in four years' time increased the sale of oranges from \$19,000,000 to \$54,000,000.

The walnut growers through cooperative educational publicity doubled their sales from 1914 to 1917, and doubled their sales again between 1917 and 1919.

Many other organizations are now conducting simlar work. These associations each spent approximately \$500,000 a year to carry on their work. There is no question but that their efforts have brought definite and far-reaching results.

Can the National Dairy Council do likewise? The dairy industry has ten talking arguments in favor of a greater use of milk and its products to every one argument that these other organizations have. The dairy industry has everything in its favor, but public opinion. They have the scientists adocating very strongly a greater use of all dairy products, the doctors, the nurses, and all educational agents. But the great masses do not understand; they do not know that there is a difference between butter and oleomargarine. They do not appreciate the food value of cheese. Neither do they recognize that ice cream is a real food, in addition to being a delicious dessert.

The one great need of the dairy industry at the present time is cooperative publicity—not the kind which results in the exchange of customers with one's competitor, but the kind that creates two customers where there was one before, and at the same time creates in the minds of each a greater demand for milk and its products.

Cooperative publicity has been put to the test and found to be a most successful way to build business. Every dairy concern in the United States will find it highly advantageous to set aside a small portion of their individual advertising budget and spend it through the National Dairy Council in cooperative publicity. If this is done the dairy industry can grow and develop as rapidly as these other industries have

As the result of an increased volume of business for this industry, the consumer will enjoy better leath, and will profit also through a saving of money, for milk and its products are fundamental foots, essential to health and strength, and are economical foods as well.

Every man engaged in this industry should see to it that lie ggis behind the National Dairy Council's work and assists in the building of this industry to the point where it belongs. The National Dairy Council is not only engaged in increasing the consumption of milk and its products, but is also equally interested in improving the manufacturing methods and also increasing the production of this vital in-

If you are willing to do your share in the development of this work, write the National Dairy Council, pledging your support. No greater work could be conducted for this industry.

ASPHALT LUBRICATING OIL

A recent report from Consul General Ravudal at Constantinople, is to the effect that in order to meet the pressing demand for lubricating oil, the directors of the Syrian and Hedjaz railways in 1916 adopted the suggestion of a German geologist to distill the bituminous limestones (asphalt), which are found abundantly in Syria and Palestine. This was done by setting up a special oven and distilling apparatus at a cost of 3.45 piasters per kilo of oil. Between Aleppo and the Red Sea 30 distinct deposits of bituminous schists are known, chief of which are those of Hashaya, Hadete, Dumar, Mekarine, and Nebi Moussa. The deposits of Mekarine are the most important because of their size and high oil percentage.

REPORT OF CALIFORNIA COMMITTEE ON STANDARDS Experimental Data Establishes Fact That It Is Not Possible

To Definitely Standardize Gallon-weight of Ice Cream

On December 18, 1919, Charles G. Johnson, California State Superintendent of Weights and Measures addressed a letter to our association suggesting that his office was interested in establishing a weight standard for ice cream. Prompted by this letter, our association appointed a committee to work throughout the year gathering data and ascertaining various things having to do with tice cream standards.

The instructions given this committee were broad and unrestricted. It was the attitude of our association to thoroughly analyze the weight question and if possible to meet any constructive and progressive plan which would be of interest to the legitimate manufacturer and the public.

It was found by this committee that nowhere in the United States had the weight standard for ice cream been suggested officially by a state department or any official body having the control of food standards. The Dairy Division of the United States Department of Agriculture reported that the matter had never been discussed by them and that they were not authority for a statement regarding same.

The National Association of Ice Cream Manufacturers, a most progressive and strong organization, interested in the advancement of the industry, officially stated that the suggested California Weight Standard was impracticable and, to their knowledge, had never before been suggested as a standard for ice cream.

Because of a decided lack of available data upon which to base conclusions our committee met at the Oakland Hotel to organize a plan for original exhaustive investigation. It seemed advisable to call upon the following parties to meet with us in an advisory capacity: Professor M. E. Jaffa, Department of Nutrition, U. C.; Professor E. J. Lea, Director Pure Food and Drug Laboratory, Berkeley; Dr. C. L. Roadhouse, Professor Dairy Manufacturing, U. C., and Mr. Hoyt, State Department of Agriculture, Sacramento.

. The advisory members of our committee, it was hoped, would be able to treat with us from an unbiased position, and help outline a program for investigation. The outcome of this meeting was the following suggested plan:

- 1. Would a minimum standard of weight per gallon be a basis for control?
- 2. Would a standard of total solids be practical and would this tend to stabilize weight?
- 3. Has weight in ice cream a close correlation with food value?
- 4. Should ice cream be sold by weight, eliminating the liquid measure?
- Dr. C. L. Roadhouse offered the service of the Dairy Division to gather data for our investigation. The following statistics were taken from these investigations as conducted under Dr. Turnbow and his assistant. The Dairy Division made no recommendation and drew no conclusions. However, our

committee will offer at various times in this report suggestions which are the outcome of careful analysis of Mr. Turnbow's work.

1. Would a Minimum Standard of Weight per Gallon Be a Basis for Control? It has been suggested that a high minimum standard per gallon be adopted as a basis for standardizing the weight of ice cream. I refer to the following table showing the weight per gallon of ice cream as drawn from three large mixes in three separate commercial factories in California; namely, factory A, mix 33.81 per cent. total solids; factory B, mix 36.05 per cent. total solids and factory C, mix 33.01 per cent. total solids and factory C, mix 33.01 per cent. total solids.

FACTORY A. WEIGHT PER GALLON SEPARATE CONTAINERS

	0 4.29										
4.2	9 4.37	4 68	4.88	4.50	4.37	4.68	4.19	4.64	4.62	4.81.	4 48
4.4	4.28	4.68	4.61	4.46	4 12	4.25	4.22	4.08	4.00	4.21	4.10
4.5	4.57	4.59	4.68	4.21	4.34	4.45	4 16	5.02	4.54	4.18	4.25
4.4.	2 4.50	4.13	4.10	4.31							
Ave	rage	weigh	per	gali	n					. 4.3	95%
Ma	ximum	per	cent.	var	ation	abo	ve at	rerage		. 7.6	5%
Ma	ximum	per	cent.	varia	tion	below	aver	age		. 9%	
Ext	reme	per	cent.	varia	tion.					.46 6	5%

FACTORY B. WEIGHT PER GALLON SEPARATE CONTAINERS (GALLON FROZEN.)

FACTORY C. WEIGHT PER GALLON SEPARATE CONTAINERS (GALLON FROZEN.)

5.10 6.00 4.80	4.40 5.11 4.50	4.30 4.65 4.90	4 50 5.20 4.71 4.50	4.50 4.60 5.00	4.40 4.50 4.30	4.80 4.67 4.40	4.50 4.60 5.33	4.40 4.65 4.30	4.50 5.20 4.30	4.95 4.40 4.92	4.6. 4.50 5.00
			5.10		5.00	4.50	4.50	4.40	4.60	4.50	4.71
			5.00								
Avet	rage	weigh	t per	gail	on					41	6635
Max	mum	Der	cent.	vari	ation	abov	e			284	67 %
31			cent.	01000	ntion	hata				7 .	79 65
Max	munt	per	centi	vati	anon	neto				*** ***	10 4
Extr.	eme	per c	ent.	varial	110m · ·			****		36.	42 6

It is noted that there is a wide variation in the weight of ice cream from the same mix. This is decisively illustrated in the above tabulations. Closer examination reveals the fact that the variation was not attributed to any one particular style of freezer, temperature of brine, flavor of ice cream frozen, or any other noticeable condition. In fact the freezing was carried on as carefully as possible and for this reason these figures are valuable, in that they show the true problem which confronts the commercial plant.

2. Would a Standard of Total Solids Be Practical? and Would this Tend to Stabilize Weight? It has been previously suggested by our committee that the total solid standard might be adopted, presuming that the higher the percentage of solids, the more uniform would be the weight per gallon. However, we refer again to the commercial factories in the following chart. Here it is shown conclusively that there is no particular correlation between the percentage of total solids and the variation in the weight of ice cream. One might even draw the conclusion that the higher the percentage of solids, the larger was the variation

> Factory A 51.30% variation 33.81% solids Factory B 98.00% variation 36.05% solids Factory C 39.00% variation 33.01% solids

It would be entirely practical to establish a standard of total solids per gallon, but from the conclusions drawn from the above table it seems of no particular advantage so far as regulating the uniform weight of ice cream is concerned.

3. Has Weight in Ice Cream a Close Correlation with Food Value? In the following table as suggested by Professor R. M. Washburn, University of Minnesota, it is clearly shown that the weight of ice cream has no correlation with the food value per gallon. If the percentage of overrun is increased in the same ratio as the percentage of total solids, the food value per gallon will be just as great in ice cream weighing 30 pounds per gallon as that which weighs 50 pounds and contains a less percentage of solids. Therefore it is readily seen that the basic weight of one gallon of ice cream is of no particular value unless the percentage of food solids is taken into account.

Total solids	Weight of gallon of mix	Weight of gallon of iec	Weight of total solids in gallon of ice cream	Per cent, of overrun
30 33 17.5 42.8 50	8.80	5.0	1.50 1.50 1.50 1.50	76.00
33	8.85	4.5	1.50	96.6 122.4
17.5	8.90	4.0	1.50	122.4
42.8	8.95	3.5	1.50	156.0
50	9.00	3.0	1.50	200.0

If the suggestion were carried out to adopt a standard of food solids per gallon it can be seen that weight per gallon would be of no particular significance. If it were possible to associate a standard of per cent. food solids and weight per gallon ice cream, then we would arrive at a standard of real value. As it is, the determining factor is the inability of the manufacturer to control the weight whether the solid content is high or low.

4. Should Ice Cream Be Sold by Weight, Eliminating the Liquid Measure? For our committee to properly answer this question, we must of necessity consider the following two factors:

a. Manufacture and Distribution Wholesale. For the wholesale ice cream manufacturer to put up ice cream in containers to sell by weight would require the complete revolution of present manufacturing methods and equipment. Under these conditions, it would require the tare weight to be marked on each container, the ice cream would then have to be weighted as it is drawn from the freezer; ice cream being a frozen product, requires that it be landled with all expediency possible to preserve its quality and after being drawn from the freezer, the weighing and tagging necessary under these methods would therefore be a scrious handicap.

b. Retail Purveyor and the Buying Public. Provid-

ing ice cream were sold to the retailer by weight we find various seriously objectionable problems to meet. From his standpoint, ice cream as we all know melts readily and if it were necessary to weigh and haudle it, we are sure that the practice would be very distasteful, and certainly would be a serious handicap toward pleasing the public. In the case of brick ice cream the problem would be to weigh separately each brick and if we should find a 90 per cent. variation, or less, as was previously illustrated in this report, it can readily be seen that the retailer would have a hard problem convincing the purchaser why he should pay as much for one pint today as he did for one pint and one half yesterday.

In treating this problem we might add that the retail seller of ice cream absorbs the shrinkage in handling between the wholesaler and the public. If ice cream weights 4½ pounds to a gallon, when it is dipped either for cones, dishes or to be packed in paper buckets it will weigh on the average of 15 per cent. to 20 per cent, more in equal displacement when sold to the consumer.

These are facts which we as manufacturers realize. The retailer also appreciates this fact and naturally regulates the margin between wholesale and retail in order to cover up this discrepancy. The public, on the other hand, actually gets more food value in a quart container of dipped ice cream than in a quart brick. Of observation is that the public is gradually buying more brick ice cream, not because they do not appreciate the fact that they would get more food value in a container of "dipped" cream, but because they feel more secure in trusting the manufacturer to measure the ice cream as is done in the form of bricks.

CONCLUSIONS.

It would be the idea of our committee to carry these investigations on at considerably greater length and try if possible to show the cause for the extreme variation in the weight of ice cream out of the same mix. We would suggest that the following factors be determined:

- 1. Does the temperature of the mix of the brine have any effect upon the variation?
- 2. Does the proportion of sugar have any appreciable effect towards stabilizing the weight of ice cream?

Also, as illustrated in this table, chocolate and strawberry ice cream, which naturally contain more sugar, show less variation than did vanilla.

3. Does the percentage of total solids have a relation to the variation to weight?

Factory	Flavor	Lowest Mt.	Wt. of solids	Highest wt. per gal.	Wt. sol. per gal.	Variation	Fotal
A	vanilla	4.00	1.352	6.052	2.066	51.3 %	33.80
13	yanilla straw, choc.	3.01 3.379 4.479	1.092 1.218 1.615	6.00 4 958 5.20	2.163 1.737 1.875	46.7 % 16.09%	36.05
С	vanilla straw.	4.40	1.419	4.71	1.981	39.53% 7.05%	33.01
	cher:	4.80	1.684	5.11	1.687	6.46%	

In concluding this report (and we do so mindful of the importance which is placed upon it) we are

most certain that until we can ascertain the cause and correct same, that the uncontrollable variation in the weight of ice cream will prohibit the setting of a standard. We, as an organization, however, should appreciate the sincere endeavor of Mr. Johnson to wait patiently for the cold facts. We hope he will appreciate the open frankness with which we have attempted to get this information for him. We want him to know that in our earlier investigation, we felt that a standard could be adopted. Now we can only say that until our knowledge of this problem is better, that we have no other suggestion, but to educationally and otherwise try to more uniformly manufacture our product. It is quite possible that through Mr. Johnson's forethought in the conduct of his duties that he has shown us a weakness which we now realize, and must strive to correct.

Respectfully submitted, ROBERT J. DRYDEN, Oakland, Chairman C. J. ALFRED, Los Angeles

F. H. BOTHELL, Los Angeles F. H. AMES, San Francisco

G. D. TURNBOW, University Farm, Davis.

Following the conference at which the above report of the Committee on Standards was submitted, S. A. W. Carver, President, California and Southwest States Ice Cream Manufacturers Association, under date of Feb. 4, issued the following bulletin:

I beg to submit the following report of the Conference at San Francisco on February 1 of the Committee on Standards, chosen at the recent Association Convention at Oakland, of which R. J. Dryden is Chairman, with Charles G. Johnson, State Superintendent of Weights and Measures, along with Professors Jaffa and Lea of the Food and Nutrition Departments of the State University.

Professor Turnbow was present, with the results of the experimental work conducted by himself and Professor Roadhouse at the State Agricultural College at Davis, including additional experiments made since the Oakland Convention, covering 8,000 additional gallous of ice cream made under commercial conditions.

Mr. Dryden presented in writing the report of our Committee, embodying also the results of Professor Turnbow's experiments up to the date of the Oakland Convention.

Reports and expressions of opinion were also presented from several well-known dairy experts connected with the leading Agricultural Colleges of the conitry. All these matters showed conclusively the impracticability of a weight standard per gallon of ice cream, chiefly for the reason that the weight of a gallon of ice cream, as drawn from the freezers and from the same mix, wabbles and varies so greatly as to render it impossible of control within a narrow enough range to permit of any practicable attempt at regulatory standards.

We had no difficulty in forcing the three officials or professors above named to admit that they (who had done no experimental work and had no practical knowledge on the subject) were not well enough informed to frame a proper or workable standard of weight per gallon. But they surprised us by immediately coming back with the alternative proposal that they would themselves make an investigation during February and be prepared by March I, when the Legislature convenes again, to formulate such a standard; or if they are not then able to frame a workable standard, they will then recommend as an alternative that all ice cream be sold by weight instead of by the gallon. This they contend will obviate the difficulties in formulating a workable weight standard per gallon.

All our attempts to show how radical was such a proposal, and how revolutionizing and disastrous it would be to the industry and to the manufacturers of ice cream equipment and supplies, and how much added inconvenience and expense it would entail, and how much it would increase the cost to the public of ice cream, were of no avail. They are an extremely radical group and seem determined to try out their radical theories upon the industry and the public.

We are confident we can depend upon our State Agricultural College, including Professors Roadlouse and Turnbow, in every way to support our position in this matter as against such freak legislation, and we believe their support, added to the exertions and influence of the industry, will make it impossible for such a bill to pass the legislature.

Professor Jaffa's opposition to the weight of food solids per gallon as a standard, as explained by Professor Washburn, is this: The California standard for ice cream is 10 per cent, fat; the milk standard is 3.5 per cent, fat, and the cream standard is 20 per cent, fat. Under these standards an ice cream made of milk, cream, sugar and harmless flavorings, etc., using 14 per cent, sugar, would contain only 31.3 per cent, of total solids, viz.:

Fat																												10.0%
Sugar						ı,	٠.					٠			٠								٠			٠	٠	14.0%
Gelatin	c									٠				۰		٠		٠										.5%
Non-fat	١		п	ai	ij	k		1	ю	di	id	5		۰	٠		٠	٠	٠	٠		۰				٠	٠	6.8%
To	1	a	1																									31.3%

In this total of 31.3 lbs, of solids in 100 lbs, of mix, 10 lbs, are butter fat and tife remaining 21.3 lbs, are solids other than fat. Since the fat solids have a food value several times greater than any of the non-fat solids, and since the non-fat solids are much cheaper than the fat, Professor Jaffa contends it would be a fraud upon the public to permit a mix of high per cent. solids—say 36 per cent.—to be used and to be frozen with an overrun large enough to bring the total solids per gallon down to the same level as would be obtained by freezing his proposed mix of 31.3 per cent above explained.

While the percentage of solids per gallon of ice cream might be the same in each case, the food value, as well as the cost of the gallon made from the heavy mix, would be somewhat lower than in the other; hence, while not objecting to the use of the heavy mix, he insists that the per cent. of butter fast should be increased in the same proportion that the total solids are increased, so that the same ratio between the fast and the non-fast solids should be maintained throughout. Therefore, he insists that any standard of solids per gallon should specify what

proportion of these solids should consist of butter fat.

Of course, we shall continue our efforts to defeat any proposed measure along these lines, and Mr. Johnson assures us that no bill will be drafted or introduced until we are given another hearing.

If such a bill is introduced during the second session of the Legislature, we shall, of course, organize to fight it in committee and among the membership of the Legislature. This letter is not only for your information, but especially to urge that you personally lose no time in getting in touch with your assemblymen and senators from your home district, as well as with any other member with whom you may be personally acquainted, and do your utmost to show up the ridiculous and impracticable character of such proposed legislation. It is the most ridiculous and dangerous piece of legislation to the industry that has been proposed in many years in California.

Get in touch at once with your trade and make sure they understand how impracticable it would be to sell ice cream by weight.

COMMITTEE TO IMPROVE SERVICE

A joint committee has been appointed consisting of three representatives of the Ohio Dairy Products Association, three general baggage agents of steam roads operating in Ohio, and three general agents of interurban electric lines operating in Ohio, organized with J. P. Dugan, General Baggage and Milk Agent of the Baltimore & Ohio, Raltimore, as Chairman, and Arthur S. Burket, General Secretary of the Ohio Dairy Products Association of Columbus, Ohio, as Secretary, as a permanent committee through which all complaints as to service rendered milk and cream shipments can be adjusted without necessity of action before Public Utilities Commissions and through which suggestions can be made by carriers to manufacturers for improvement in shipping arrangements.

This committee was appointed following a conlerence between representatives of the carriers and representatives of the dairy association, called after complaint had been filed by the Ohio Dairy Products Association before the Public Utilities Commission of Ohio against the Ohio carriers to require the issuing of waybills and receipts for shipments of milk and cream and the return of empty cans, and to correct evils of transportation service alleged to exist in Ohio.

The committee as it is now organized consists of the following representatives of the steam roads, viz. C. S. Shoemaker, General Baggage Agent, Pennsylvania Lines; J. B. Calkins, General Baggage Agent, C. C. C. & St. L. R. R.; J. P. Dugan, General Baggage Agent, Baltimore & Olio R. R.; the following representatives of the Interurlan Lines, viz.; W. S. Whitney, General Passenger and Freight Agent, Ohio Electric Railway; C. O. Sullivan, Traffic Managger, C. & S. W. & Col. Rwy, Co.; and the following representatives of the Ohio Dairy Products Association, viz.; H. C. Berry, Ohio Dairy Co., Toledo; A. E. Stouffer, Medina County Creamery, Cleveland, and W. W. Davis, Licking Creamery, Newark, and to which the American Railway Express Company has been invited to have representatives.

At the last meeting of the committee G. D. Curtis, Supt. of the American Railway Express Company was present.

At a meeting in Columbus of this committee on February 17 the following suggestions were made for improvement of service:

- That the carriers exercise a closer supervision over shipments.
- That the shippers provide permanent markings on all cans, such as having the name of the company embossed on the can or using hrass plates riveted to the can.
- That the carriers gather together all stray cans without permanent markings and report to the Association periodically the possession of such cans with any identification marks contained.
- That the carriers circularize their agents with suggestions and directions for improvement of service and notify agents to forward cans to the owner where known on the next train.
- 5. That the fieldmen operating for the manufacturers in the state report any violations on infractions of instructions given to agents by the carriers.
- That the carriers instruct their employees that no milk or cream cans are allowed to be in the caboose of trains.
- That effort should be made to secure state laws to regulate the unlawful use of cans by parties borrowing or stealing them.
- 8. That the shippers instruct their agents to remove all cans promptly from the stations of the carriers.

This committee has now been made permanent, will hold regular meetings, and it has been suggested that these conferences he held in different large cities so that the committee can make personal inspection of the facilities of the cities visited, that all the dairy interests residing in these places be invited to attend the conference in advance so as to correct any conditions of transportation, which might be found and which can be avoided by cooperation.

It is the hope of both the mamufacturers and the carriers that through the medium of such a permanent committee that there should not be any necessity in the future to apply to public commissions, and that the cooperation of the carriers and the manufacturers can accomplish and correct the transportation evils which have existed in the past.

ARTHUR S. BURKET, Secretary.

During the past few years the number of gasoline consuming engines and vehicles, including pleasure cars, trucks, motor boats, tractors and farm engines, has increased to such an extent that there is danger in the near future of an acute shortage of this most important fuel. In the United States alone there are 4,000,00 automobiles, 250,000 trucks, 500,000 motor boats, 75,000 farm engines, making a total of 5,575,000 gasoline-consuming engines.

VALUE OF TRAILERS FOR TRANSPORTING ICE CREAM

Besides Reducing the Always Important Item of Delivery Expense the Use of Trailers Facilitates Prompt Deliveries

By Gilbert I. Stodola

The wholesale ice cream business is rapidly becoming motorized. There are several reasous for this. Aside from the greater economy in operation of the motor truck compared with the horse-drawn vehicle, as shown by the proportionately lower operating expense of the former, the far greater rapidity of transportation and wider radius of activity possessed by the motor vehicle make it highly desirable in the hauling of ice cream.

The next step in improving the transportation of ice cream has come with the addition of the trailer to the motor equipment. A trailer, in brief, is a two-wheel or four-wheel vehicle especially planned and constructed to be operated with a motor truck, automobile or road tractor.

Centuries ago it was found that a horse could haul a considerably heavier load than he could carry on his back. The load was therefore put on a sled, and later on a wagon, to which the horse was hitched. When motor vehicles began to come into use it was natural, therefore, to make use of the old style wagon by hitching it to the motor vehicle. But while this plan seemed perfectly feasible in theory, it did not work out in practice. For although the ordinary iron-tired wagon was enitrely satisfactory when operated behind a slow-moving horse, it was soon wracked to pieces when drawn by the more rapid truck or automobile. Manufacturers then began to manufacture trailers in which they embodied all the



FOUR-TON, 4-WHEEL, REVERSIBLE TRAILER WITH SPECIAL BODY CONNECTED WITH 15%-TON TRUCK.

most improved devices which are put into the best motor trucks. Trailers now have roller or other auti-friction bearings, rubber tires, and arrangements for taking up the jar of stopping and starting, thus taking the strain off the hauling vehicle. Moreover, the axles, wheels and drawbar are so constructed that the trailer follows smoothly in the track of the vehicle which is towing it, there being no cutting of corners or wolbbling and the possibility of overturning being eliminated.

One of the most important advantages of the

truck and trailer combination for the ice cream industry is the low cost of operation, compared with that of a second truck of equal load capacity. This is due to the fact that a truck-trailer combination can handle a much heavier load than the truck could transport alone; yet the operating expense is increased only about one-fourth. The reason for this is that it is necessary, in building a motor truck.



PART OF FLEET OF 12 SEMI-TRAILERS IN THE SERVICE OF A DETROIT ICE CREAM COMPANY.

automobile or tractor, to make the engine powerful enough to enable the vehicle to climb steep grades or go through heavy mud. But on the average road of fairly hard surface and reasonable grade this reserve power is not used, so that a truck or automobile can carry not only its own normal load, but under such conditions can haul in addition an equal load on a two-wheel or four-wheel trailer. Or, if a semi-trailer is used, the load capacity of the combination is three times that of the towing vehicle alone.

Another meritorious feature of the trailer in the handling of ice cream is the saving of time, effected by its use. For instance, the trailer may be at the factory being loaded while the truck is on a trip with another trailer; when the truck returns with its empty trailer the latter may be unhitched and the loaded trailer hooked on in a few minutes. Or again, the truck may start out with a trailer, leave the latter at the station or elsewhere to be loaded with salt, cream, fruit or anything clse, and later pick up the load on a return trip, with a minimum loss of time.

The substantially lower initial cost and operating expense of the trailer, compared with that of a truck of equal load capacity, is another important point in its favor when used for hauling ice cream. The trailer thus adapts itself to the daily and seasonal variation in demands. When the call is heavy the trailer may be used with a truck, at a much lower expense than if it were necessary to operate an additional truck. Moreover, it costs substantially

less to handle a partial load on a trailer than it would be to transport it on a truck.

There are a number of makes of trailers on the market, made in various styles and sizes adapted to individual needs. However, the three principal types of interest to the wholesale ice cream manufacturer are the two-wheel, the four-wheel and the semitrailer.

The two-wheel trailer has two wheels and one axle. It is generally light, being intended to be operated with passenger cars, and therefore would be more likely to be used by retailers, who usually



FOUR-WHEEL TRAILER PUT TO EFFECTIVE USE IN THE DELIVERY OF ICE CREAM.

have relatively lighter loads to transport than by wholesalers. The two-wheel trailer carries the entire load over its axle, none of it being borne by the truck. A drawbar from four to six feet long connects the trailer with the towing vehicle.

The four-wheel trailer, as its name implies, has four wheels and two axiles. It may vary in size from the small styles, capable of handling from a few hundred to 1,200 pounds and usually employed with passenger automobiles, to the large sizes which run up to ten tons load capacity, and are intended to be operated with motor trucks or road tractors.

Although a few makes of four-wheel trailers are built on the principle of the horse-drawn wagon, having, for instance, rigid axles, so that the front wheels turn as a unit on the fifth wheel, most fourwheel trailers embody the features of the motor truck. Thus they have steering knuckle axles with the tie-rod linked to the drawbar, enabling the front wheels and the draw bar to steer as a unit. Sturdy compression springs absorb shocks and strains and prevent damage to truck or trailer through sudden stopping or starting or other causes. The drawbar also has a bumper head not unlike that of a freight car. Sometimes it is desirable to couple two or more trailers together, train-wise, and to permit of this the drawbar usually has a large slot connection. This arrangement allows movement from side to side, but not vertically. The spring drawbar makes possible the instantaneous coupling up of the truck and trailer. Four-wheel trailers may be had in reversible as well as non-reversible styles.

The features just described are embodied in the most approved makes of trailers, but trailer manufacturers are alert to meet special conditions by appropriate devices or special construction. For example: In the Middle West, where the country is flat, the roads are laid out in section lines. Thus that part of the road given over to traffic is narrow, resulting in exceptionally abrupt turns. A trailer manufacturer has met these unusual conditions by putting on the market a short-turn trailer, so constructed that both front and rear wheels steer. This is accomplished by connecting the axles by hardwood reaches, the axles thus turning in opposite directions, but at the same angle. As a result the wheels of the trailer, even under these unusual road conditions, follow in the exact track of the rear wheels of the towing yehile.

As used for hauling ice cream, the four-wheel trailer of course carries its own load. Since the truck towing the trailer can carry an equal load, the use of the combination reduced the ten-mile transportation cost twenty to thirty per cent, compared with the figure for transportation by truck alone.

The semi-trailer, like the two-wheeler, has only two wheels and one axle, but the semi-trailer, instead of being connected to the towing vehicle by means of a drawbar, is linked up by the use of a "fifth wheel" very much in principle lake the arrangement of the same name employed in horse-wagons. This "fifth wheel" enables the towing vehicle to turn under the front end of the trailer.

When the semi-trailer is used with a truck or automobile the body of the towing vehicle is usually removed and the front end of the trailer is set on the platform. The truck or automobile thus practically becomes a tractor. It usually carries no load of its own, but the weight of the load is distributed between it and the trailer, the tractor sustaining approximately 40 per cent., the trailer 60 per cent., the figures, however, varying with conditions.

A combination of semi-trailer and truck, passenger car or tractor can handle a load about three times as large as the towing vehicle could negotiate alone, the exact size of the load depending upon the character and condition of the roads and other factors. Thus a one-ton truck or tractor equipped with a semi-trailer becomes practically a two to three-ton truck, yet the operating expense is much less than it would be for a truck of equivalent load capacity. The semi-trailer is so constructed that it may be quickly coupled and uncoupled and is equipped with some type of jacking device, which keeps the front end off the ground when the trailer is disconnected from its towing vehicle.

The trailer used for hauling ice cream may, of course, easily be equipped with the special bodies purposely designed for use with trucks for transporting ice cream. These refrigerator bodies are being used more and more by the trade, for wholesale ice cream manufacturers are recognizing their economy and efficiency.

The low operating expense of the truck and trailer combination is one of its valuable features. Despite the fact that the load capacity is increased from two to three tons, the operating expense is increased only about 25 per cent., about 15 to 20 per cent, of this being accounted for by the additional gasoline and oil required to operate the truck or other towing vehicle

Repair bills for trailers are also low. This is to be expected when we remember that there is no complicated engine or driving mechanism to get out of order. The item of tire wear, too, is a small one. Few states require registration, and even where it is called for the fee is low. Taxes are also correspondingly lower, since a trailer costs less than a truck of equal load capacity. To offset this, however, there is a slight increase in the increase premium for collision liability.

A trailer costs only from one-fourth to one-third of what a truck of equal load capacity would cost, and consequently when the trailer is not in use the time of interest to be charged against it is correspondingly less. This is a point of importance, in view of the seasonal character of the ice teream industry, and makes a substantial difference where a large motor equipment is operated. Prices of trailers run somewhat as follows: Four-wheel trailers, one-ton capacity, from \$300 to \$600; two-ton, \$500 to \$500; thre-ton from \$1,200 to \$1,700. Prices of semi-trailers are usually correspondingly lower than those of four-wheel trailers.

The following are a few typical examples, showing how ice cream inamufacturers are effectively solving their transportation problem with the help of tralers.

The Supplee-Wills-Jones Milk Co., of Philadclphia, employs four-wheel trailers with its 3½-ten trucks for delivering ice cream. This firm has found trailers highly satisfactory for the purpose. By using a trailer with a truck on warm days a load can be handled double as large as that which the truck alone could carry, whereas on cool days, when the demand is less, the truck alone is sufficient. This plan avoids the undesirable feature of having to use a large truck on cool days with only a partial load, or the necessity of operating extra trucks when the demand is heavy and which would stand idle when the demand falls off. It is far preferable, of course, to have a comparatively inexpensive trailer stand idle than a high-priced truck.

The Riegler Ice Cream Co., of San Antonio, Texas, has an equipment of twenty motor trucks and trailers, by means of which it is able to make deliveries of ice cream to surrounding points as far as a hundred miles away. This delivery system has enabled the company to luild up a large business in surrounding territory, as well as to obtain a considerable part of the trade in San Antonio itself. The use of trailers on long hauls makes possible the transporting of a five-ton load with a two-ton truck.

A Detroit manufacturer, the Arctic Iee Cream Co, has been using semi-trailers for four or five years. Its equipment consists of a fleet of truck-trailler units, from four to six tons capacity, which are designed especially for transporting ice cream. However, a load of from six to eight tons is frequently hauled without difficulty. The approximate cost of the type of outfit used by the Arctic Company is as follows: 1½-ton truck, \$2,750; semi-trailer with body, \$700; total, \$3,450. A 3½-ton truck with body

would cost about \$4,450. Thus about \$1,000 would be saved on each unit, making a total saving on ten units of \$10,000 on initial cost. Robert Johnson, superintendent of the firm's motor equipment department, stated that semi-trailiers lawe been iound so useful that it would be a serious handicap were the firm compelled to dispense with them.

The Tabor Iee Cream Co., of Cleveland, Chio, las found that an equipment of two two-ton tractors operated with five-ton trailers do the work of six lorse teams. A representative of the company iurther states that an accurate record has proved that this equipment has reduced delivery costs one-third, besides creating invaluable good will by pleasing customers by prompt delivery.

NATIONAL ASSOCIATION NOTICE

Attention is directed to the following items of information which have come to hand and which it is thought may prove of consderable interest:

War Finance Corporation

The above named Corporation has just announced the completion of preliminary arrangements for its first loan since it was recently revived by joint resolutions of Congress. The directors of the Corporation on February 2 approved a preliminary application of a group of American Banks for an advance of not exceeding \$10,000,000 for one year, to finance the exportation of condensed milk and other milk products to England and other European points.

Business Conditions

The Federal Reserve Board's review of business conditions throughout the several federal reserve districts for the month of January states that business developments during January have shown a slight but unmistakable turn toward a better state of affairs. At some plants where considerable numbers of men have been unemployed, industrial operations have been resumed in whole or in part. The Bureau of Labor, however, reports a total of 3,473,466 unemployed for the country as a whole. Prices in many lines have gone no lower than the level which had been established at the close of 1920. Banking conditions have materially improved partly through the steadier and more rapid movement of agricultural products to market and partly through the more rapid liquidation of paper already held by member banks. As a result the reserve ratio of the Federal Reserve System has risen to 49 per cent, at the last reporting date in the month (January 28). Member bank conditions also show improvement in liquidity and increasing strength. Failures have been relatively fewer. While it can not be said that very material alteration of fundamental conditions has occurred, enough progress has been made to give assurance of a steady movement toward sounder, conditions in business There is a wide demand for American goods, the difficulties connected with marketing being found in the question of prices and of terms to be required of purchasers.

Bulletin No. 43, February 12, 1921.

A smile is your best reference and introduction

THE VALUE OF ICE CREAM IN THE DIET OF CHILDREN

Ignorance in Regard To the Properties of Food Is Widespread States the Author Who Advocates Educational Campaigns To Spread the Knowledge of What Constitutes a Good Diet For a Child

By Mrs. Ira Couch Wood

Director, Elizabeth McCormick Memorial Fund, Chicago

From an address delivered at the annual convention of

The National Association of Ice Cream Manufacturers

It is with considerable trepidation that a mere woman breaks into this meeting, but, as perhaps you realized in inviting me, it is fast becoming the fashion in fact, it is almost compulsory, to include women in conventions and deliberations of all kinds. Since we women have been given our political rights and privileges, with their corresponding responsibilities (which the men have borne so long and so cheerfully alone). I suppose it is but a sign of the new order that you should include a woman speaker on the program of your Convention.

I am, of course, ignorant of the details of your business, and I am not here to suggest any startling innovation in your manufacturing processes to advocate changes in the relations between you and your dealers, but I do come to say a word for the ultimate consumer, and I am going to say it as a friend of the children. As the preceding speaker very aptly said, there is no question about the appetite for ice cream in America, I hope to be able to suggest to you, however, that you have not as yet fully measured the capacity of the American child and of his parents for ice cream, nor yet given the public all the reasons for the purchase and consumption of pour product. If I am able to furnish you with any "talking points" in your advertising program, I shall be very happy indeed and feel that it will not have been entirely a matter of courtesy that you have placed a woman on your program.

I have the pleasure of coming before you today as the Director of the Elizabeth McCormick Memorial Fund, a foundation established by Mr. and Mrs. Cyrus Hall McCormick in memory of their daughter and devoted to improving the conditions of child life in the United States. The Fund has been, so far, chiefly devoted to promoting the health of children, because that is the field that has been most generally neglected. To further this purpose the Memorial Fund has been carrying on open air schools in Chicago, for the past twelve years, to benefit children who might otherwise become the victims of tuberculosis. It has also, during the past year, developed nutrition classes for underweight children in the public schools and elsewhere. The open air schools and the health classes are, of course, largely concerned with the diet of the child, and one of the things that we wish to show in our work is what results we can obtain in the improved health of children through proper feeding. Knowing, as you do, the vital properties of milk and all milk products for the human family, it is hardly necessary to say that we stress the use of milk, butter, ice cream and cheese, in all of the work. During the past two years, we have had the cordial cooperation of the National Dairy Council, and, during the past year, of the Milk Dealers' Association of Chicago. Through the Dairy Council we have had opportunities to show the value of correct feeding, including the use of milk, for children, and have prepared educational exhibits for the National Dairy Show showing almost miraculous changes in undernouristed children, who have been given a quart of milk a day. The milk dealers have also been generous in giving us an allowance of milk for your health classes, so that we might teach the parents, through experience in the improved health of their children, the value of milk in the diet of the family.

This talk of health and the welfare of children seems almost to fill the air today, and yet until now both have been seriously neglected in our national life. The children of America are said to be more indulged (perhaps over-indulged) and more tenderly regarded by their parents than the shildren of any other nation on earth, but these same children have on the whole been more unintelligently treated than those of almost any civilized country. We are sevently down the list of civilized nations in the death rate of our children, each year losing almost half a million of them under six years old. In this rich and progressive country we have been singularly blind to the fact that if we build without health as the foundation of our national existence we are but building upon sand and with small possibility of future greatness.

We were, however, aroused from our complacent attitude in regard to our disgracefully large toll of child life paid each year, and the general neglect of health, by the findings of our draft boards during the war. For the first time the youth of our nation was put through an acid test for physical fitness, with the result that over one-third of our young men were rejected as not capable of sharing in the defense of the nation in her hour of need. It was proved, moreover, that most of these rejected men were suffering from difficulties and defects which could have been remedied had they been recognized in childhood. The discoveries made through the physical examinations for army service were reinforced by extended surveys and studies made during the past few years, which showed that about 70 per cent, of all our school children are suffering from physical handicaps that impede their progress to a greater or less degree. while from one-third to one-half of our school children are under weight and under-nourished. It is evident, therefore, that the work of promoting the health of children is a movement vital to the future efficiency and welfare of our nation. You may feel that a health program is a far cry from the marketing of your product, but let me remind you, in the first place, that the promotion of health among your own

employees, for instance, would be one of the soundest investments that you could make. If each of you had a corps of men and women working in your plants, all of whom came to their work with joy in the morning. and left it with "pep" at night, who had health equal to any emergency or unexpected strain upon them, you would certainly not have so large a labor turnover, so many losses from inefficiency, and you would have a stable instead of an unstable quantity to deal with in considering the output of your establishment. In the second place, you are manufacturing a product which is one form of a food absolutely indispensable to the human race. Dr. McCollum and others have proved that man cannot reach his full stature, nor his full measure of physical usefulness, if he is not given milk products in some form. Therefore, your advertising might well be based upon the sound appeal to health, a plea to which no mother interested in the welfare of her children could afford to turn a deaf car.

I should like to state at once that the program in the nutrition classes we have carried on in Chicago, as well as in the open air schools, is educational in every sense of the word. It has been shown that as many children in our well-to-do districts are underweight and undernourished as in the poorer neighborhoods, proving in every survey that has been made that the problem is not one of poverty, but of ignorance. Our methods, therefore, are bound to be educational and not philanthropic. We are not promoting a program of free feeding of school children, but are teaching the value of proper food in health building and giving such a training in health habits as will lead to a future of full productivity efficiency and happiness. It is our idea that health through correct feeding and proper living can be taught just as easily and successfully as arithmetic, reading, geography and history, and through methods as simple and as practical as those with which we are now familiar in our schools. The ignorance in regard to the properties of food is so widespread that you could not do a finer service, not only for the promotion of your own industry, but for your community and your nation than to spread as widely as possible the knowledge of food values and of what constitutes a good diet for a child, whether he be rich or poor,

A few years ago we knew of no measure upon which we might count to indicate the physical well-being of a child, but the studies of scientists have lately shown us that a child's weight in relation to his height, in the first place, and then to his age, is a very definite indication of his physical development. With a scale and a measuring rod it has, therefore, been possible to valuate, as it were, the health product of the homes and schools of the country. The result of these tests has shown us how widespread is the menace of undernourishment among our children and the necessity of grappling with the problem with every means at our command.

The term "nutrition" has been largely associated in our minds with food, but we have now learned to speak of nutrition as indicating the whole physical welfare of the child. Formerly we were satisfied to applogize for the skinny or puny child by putting

the burden for his condition on his ancestors, declaring that little John "takes after his Grandfather Williams, who was always thin" or by explaining that "Mary is just like her aunt Jane, who never could put on any weight." This is certainly not a fair deaf either for the child or the ancestors, because no one can tell definitely whether a child is intended by nature or Providence to take after thin Grandfather Jones or fat Grandmother Smith. Thinness is not due to heredity, not to predestination, nor to a decree of Providence, nor to original sin, but to causes quite within the control of the parents and their medical advisers. The problem is distinctly up to the parents. They must find out, in the first place, whether or not there are physical defects which may be hampering the child's development; secondly, whether he is being properly fed with energy and growth building foods; and, finally, whether his home and school program are such as to promote health, as well as develop the child mentally. Do not imagine, as so many people do, that I am speaking only of the undernourishment of city children. By actual count there is more malnutrition among children living in the rural sections than in our large cities, though to convince our country neighbors of this is one of the hardest things we have to do, when these facts are urged. The reply is always made that of course such children are all right, because they live in the country where there is plenty of milk, cream and butter. Yes, but who gets these rich gifts? Not the children always. This reminds me of a story I heard recently: The women of a rural community were starting hot school lunches for the children in a little country school. Different mothers took turns furnishing the milk or cocoa and the one hot dish. One noon there was no milk for the children to drink and one little child brought a note from her mother-the wife of the most prosperous farmer in the county-which said "We need it all for our

Some one has said that if a farmer were raising his children to be sold by the pound, he would feed them as scientifically as he does his cattle, and would keep for his children some of the vegetables and milk which are sent to city markets to help nourish the children there. Do you think the average farmer would be satisfied to dismiss from his mind the condition of any of the animals on his farm with the explanation that the "little pig is thin because he is growing \$6 fast," or "the calf is not putting on weight because it takes after its father?

- Dr. William R. P. Emerson, of Boston, has given us the reasons for malnourishment as the result of his twelve years' work in Boston. The program he recommends to bring these children up to normal health and vitality is about as follows:
- 1. A complete physical examination by a competent physician, in the presence of the parents.
- The remedy of physical defects found—i.e., diseased tonsils or adenoids removed; teeth treated; eye strain relieved, etc.
- 3. The usual three meals a day, eaten very slowly, consisting of milk, butter, bread, cereals, vegetables,

clubs omitted.

fruits, some sweets, and little meat; no tca, coffee or coca cola.

- Two extra limelies at 10:30 and 3:30 of milk and erackers or bread and butter. Never give sweets between meals, as they impair appetite.
- 5. A rest period of one hour in the morning, and another of half an hour in the afternoon-lying flat; ten hours' sleep at night, all with windows wide open.
- ten hours' sleep at night, all with windows wide open.

 6. School hours shortened, or given up entirely if need be until health is gained; outside classes and
- 7. No vigorous exercises until weight is normal but plenty of play time out of doors.
- No nervous excitement—few parties, "movies," picnics, until the habit of weight gaining is established.
- Children should have at least one regular bowel movement a day, preferably just after breakfast, and should be taught great respect for all their bodily functions.

This program has been adopted, so far as possible, in the health work done by the Elizabeth McCormick Memorial Fund, and the results of the work in Chicago have been most gratifying. The majority of the children in the classes have made wonderful gains, the average ranging all the way from 150 to over 800 per cent, of the average expected gain. The work has been particularly successful where the children have been placed in open air camps where the complete program could be put into effect, and one group of boys who had been refused their working certificates because of physical disability gained on an average of 335 per cent. at Arden Shore Camp, Lake Bluff, Illinois, last winter. Another group sent to a camp at Saugatuck, Michigan, last summer gained at the average rate of 513 per cent, of the normal expected gain during the eight weeks the camp was open, and one boy gained nineteen pounds in seven weeks. Twenty girls from the Employment Certificate Bureau sent to Arden Shore gained at the rate of 853 per cent, of the average expected gain for girls of their ages. These children are maintaining their gains now that they have received their working certificates and report at a night clinic in Chicago, run under the Board of Education by the Employment Certificate Bureau.

The Elizabeth McCormick Memorial Fund feels convinced that the school is the logical place for these classes, since health is the fundamental of all education, though up to the present time it has been almost an unknown quantity in the school curriculum. It has also been shown clearly that the success of the mutrition class depends not only on the personality and teaching ability of the nutrition worker but on the successful cooperation of the homes and schools. The child holds all the promise of the future in his hands, and it is only if we teach him to build well that we shall have a sound nation to carry forward the traditions and ideals which the builders of our Republic have passed on as a scared inheritance to us.

In conclusion let me say—do not be afraid to urge the promotion of a health program in connection with the marketing of your product. It will bring results! Above all things, however, see that the prod-

uct each one of you furnishes is absolutely pure and one which you can with a clear conscience recommend for children. People who adulterate dairy products in any way seem to me particularly vicious as betraying the confidence of the public in a food which is absolutely essential to the life of the human race. It is a part of your responsibility, as dealing with one form of this indispensable product, to see that you guarantee its purity to the mothers and children who have confidence in what you have to sell, and who should not be betrayed. Perhaps you think we cannot mix business with sentiment, but I myself believe that part of the business success of America is due to the vision and ideals behind it, and to the fact that some of the leaders in commercial life have not been afraid to consider human welfare as good business.

CANCELLATION HURTS BUSINESS

Cancellation of contracts is one of the contributary causes for the present slump in business, according to a statement issued today by the Fabricated Production Department, of the Chamber of Commerce of the United States. This conclusion was reached by the department after a six months' study of the cancellation evil.

The influence of early repudiation of orders, it is pointed out, spread rapidly and brought about a creeping paralysis of industry. In a number of lines, partly because of cancellations, plants were reduced from overtime production schedule to three days a week and in some instances to a complete shut-down. Legal remedies have been of little avail, for the allment has shaken confidence, which must be restored before better times can be looked for, according to the department.

The investigation of cancellations showed that there were plenty of cancellations mutually arranged which were beneficial to both parties, but there were many others which worked a hardship on either the buyer or seller. Of the latter type the number of sellers who violated their contracts was about equal to the number of buyers who cancelled orders. The investigation also disclosed that a large number of business men took losses rather than repudiate.

In an effort to restore confidence and avoid future misunderstanding, the following proposals are put forth by the department;

Draw contracts in conformity with the law of the state in which they are completed or accepted—making the obligations of both the seller and buyer equitable.

Provide in them for arbitration in case of dispute either under the State law, rules of trade organizations, or other adequate agency.

Incorporate questions in your credit inquiries, the answer to which will establish the applicants' cancellation record.

Consider it a duty and a privilege in protection to American business standards to report on inquiry those who unjustly and habitually disregard their contract obligations.

Urge your trade or commercial organizations to record their disapproval of all practices which have led to the present unsatisfactory conditions. It will help strengthen the weak.

PROPORTIONING THE INGREDIENTS FOR ICE CREAM

Besides Being Applicable to All Combinations of Ingredients the Balance Method Furnishes an Itemized Record of the Materials Used

By O. E. Williams

Dairy Manufacturing Specialist, U. S. Department of Agriculture From an article in the Journal of Dairy Science

One of the most satisfactory methods that can be used for proportioning the ingredients in making large ice cream mixes is what we have called "the balance method," It is a method that can be easily understood, is applicable to all combinations of ingredients and reduces to a minimum the chances of error in the calculations. Furthermore, it furnishes an itemized record of the ingredients used for each mix. The proportions obtained by this method are based on five conditions:

- 1. The amount (pounds) of mix that will be necessary to produce the number of gallons of ice cream desired.
- 2. The composition (standard) of ice cream desired.
- 3. The amount of solid constituents necessary for the mix.
- 4. The quantity and physical condition of the ingredients on hand.
- 5. The composition of the ingredients to be used.

Five examples of this method of proportioning the ingredients are explained as follows:

EXAMPLE 1

Mix.-Give the proportion for 350 gallons of ice cream testing approximately 14.5 per cent. fat, 14 per cent, sugar and 6.5 per cent, milk solids not fat. The weight of the ice cream desired is 5 pounds per

Stock on hand-Sugar, 150 pounds of 28 per cent. cream, 520 pounds of 43 per cent. cream, and skim

ILLUSTRATION OF EXAMPLE !

		Composition Desired				
Total Pounds Desired 1750	Ingredients	Fa1 14.5%	Sugar 14%	s. n. f. 6.5%		
	and Composition	Constituents Necessary				
		253.75 lbs. 245 lbs. 113.6 lbs.				
		Constit	uents Furr	ished		
Pounds 245.0	Sugar	Pounds	Pounds 245.0	Pounds		
150.0	Cream, 28 per cent,	42.0	0.5.0	10.0		
492.5 862.5	Cream, 43 per cent. Skim milk, 9 per cent.	245.75		26.0 77.6		
1750.0		253.75	245.0	113.6		

Condition 1. To get the total number of pounds in the mix, multiply the desired number of gallons of ice cream by the number of pounds expected in one gallon of the finished product. For instance, in the first example 5 pounds is the desired weight of one gallon of ice cream, hence;

 $350 \times 5 = 1750$ pounds of mix.

Condition 2. The approximate composition of the ice cream desired in the first example is 14.5 per cent. fat, 14 per cent. sugar and 6.5 per cent. milk solids not fat.

Condition 3. To find the amount of solid con-

stituents necessary, multiply the pounds of mix by the percentage of fat, sugar and milk solids not fat as in the first example:

 $1750 \times 0.145 = 253.75$ pounds of fat $1750 \times 0.14 = 245.0$ pounds of sugar $1750 \times 0.065 = 113.7$ pounds of mik solids not fat.

Conditions 4 and 5.-

OUANTITY AND COMPOSITION REPORT

	Far	Sugar	m. s. n. f.	on hand
Cream Cream Skim m·lk	. 43	per cent.	per cent. 6 4 3.3 9.0	150 pounds Plenty Plenty

After these basic conditions are determined, write the pounds of mix, the percentage of constituents desired and the pounds of each constituent in table form and list the ingredients to be considered for the mix as shown in the illustrations.

The calculations necessary in determining the proportions are as follows (consider the ingredients as they are listed):

Sugar. The amount of sugar is the same as the amount calculated for the mix since there is no cane

sugar in the other ingredients. Cream (28 per cent.) The 150 pounds of 28 per cent, cream does not contain more fat than is needed.

hence the entire amount can be used. Cream (43 per cent.). The amount of 43 per cent. cream can be determined by subtracting the amount of fat added by the 150 pounds of 28 per cent, cream from the total amount required and dividing the remainder by 0.43, thus:

253.75 + 42 = 211.75 211.75 + 0.43 = 492.5 pounds of 43 per cent. cream

Skim milk. From this ingredient will come the balance of the constituents (m. s. n. f.) of the mix. The amount required will be the difference between the amount of ingredients already used and the total (1.750) pounds required. For instance, 1.750 -(245 + 150 + 492.5) = 862.5 pounds of skim milk.

EXAMPLE 2

Mix. Give the proportions for 500 gallons of ice cream testing approximately 14.5 per cent. fat, 13 per cent, sugar, 9 per cent, milk solids not fat and 0.5 per cent, gelatine. The weight of the ice cream desired is 5 pounds per gallon.

Stock on hand Sugar, gelatine, 342 pounds of 30.5 per cent. cream, 1,608 pounds of 38 per cent. cream, 720 pounds of condensed milk testing 8.2 per cent. fat, 42 per cent. sugar and 21 per cent. milk solids not fat, and skim-milk powder.

The calculations necessary in determining the proportions are as follows (consider the ingredients as they are listed):

Granulated sugar. The amount of granulated

sugar can not be determined until the condensed milk is proportioned.

Gelatine (powder). The amount of gelatine is the same as that calculated for the mix.

HILESTRATION OF EXAMPLE 2

Total Pounds 2500	Ingredents and Composition	Fat: 14.5% 362.5 lbs.	Sugar: 13% 325 fbs.	M. S. N. F. 97, 225 lbs.	Gelatine: 0.5 % 12.5 Ilbs.	
1ba. 23.0	Granulated sugar	lbs.	1bs. 23.0	lbs.	lbs.	
12.5	Gelatine (powdered)		23.0		12.5	
342.0	Cream, 30.5 per cent	104.3		22.0	****	
524.0	Cream, 38 per cent.	199.0		30.0		
720.0	Condensed milk 8.2 per cent. fat, 42.0 per cent, sugar, 21.0 per cent, m, s, n, f.	59.0	302.0	151.0		
. 23.0	Skim-milk powder			22.0		
855.5	Water					
2500.0		362.3	325.0	225.0	12.5	

Cream (30.5 per cent.). The 340 pounds of 30.5 per cent, cream does not contain more than a small proportion of the fat required, hence the entire amount can be used.

Cream (38 per cent.). The amount of this cream required can not be proportioned until after the condensed milk is proportioned since it contains 8.2 per cent. fat.

Condensed Milk. The amount of sweetened condensed milk that can be used is limited by the amount of sugar and milk solids not fat it adds to the mix. The 720 pounds of condensed milk will add only 302 pounds of sugar and 151 pounds of milk solids not fat, hence the entire amount can be used.

Granulated sugar. With the condensed milk proportioned, the amount of granulated sugar necessary can be determined by subtracting the amount added in the condensed milk from the total amount required, thus:

325 - 302 = 25 pounds of granulated sugar.

Cream (38 per cent.). Now that the condeused milk is proportioned, the amount of 38 per cent. cream may also be determined. The amount is obtained by subtracting the sum of the fat contained in the 342 pounds of 30.5 per cent. cream and the 720 pounds of 8.2 per cent. condeused milk from the total amount required and divide the remainder by 0.38, thus:

$$362.5 \leftarrow (104.3 + 59.0) = 199$$
 * 199.0 ÷ 0.38 = 524 pounds of 38 per cent, cream.

Skin milk powder. From this ingredient must come the balance of the milk solids not fat needed in the mix. This is determined by the difference between the sum of the m. s. n. f. added by the cream and condensed milk and the total amount required plus 5 per cent. For instance:

$$225 - (22 + 30 + 151) = 23$$

 $22 + (0.05 \times 22) = 23.1$

The amount of m. s. n. f. in the cream is determined by multiplying the difference between the amount of cream used and the amount of fat it contains by 0.093 (the amount of m. s. n. f. in the milk serum). Skim milk powder contains on an average 3.5 per cent. fat,

consequently an allowance of 5 per cent. is made in balancing the m. s. n. f.

Water. The required amount of solid constituents having been added, the amount of water needed will be the difference between the total amount of mix required and the sum of the ingredients used.

The accuracy of the calculations can be ascertained by comparing the sum of the figures in each column with the stipulated amounts placed at the top of each column.

When this is done, the ingredients are proportioned by careful weighing. The mix is then ready to be pasteurized and homogenized.

ENAMPLE 3

Mix. Give the proportions for 350 gallons of frozen product testing approximately 9 per cent. fat, 14 per cent. sugar, 12 per cent. milk solids not fat, and 0.5 per cent. gelatine. The weight of the product desired is 5 pounda per gallon.

Stock on hand. Sugar, gelatine, 150 pounds of 28 per cent. cream, 480 pounds of 34 per cent. cream, skim milk, and 900 pounds of condensed skim milk.

ILLUSTRATION OF EXAMPLE 3

Total Pounds 1750	Ingredients and Composition	Fat: 9% 157.6 lbs.	Sugar: 1.4% 245 lbs.	M.S.N.F. 12% 210 lbs.	Gelatine: 0.5% 8.75 lbs.
lbs. 245.0	Cane sugar	lbs.	1bs, 245	lbs.	lb≤.
87.5	Gelatine solution, 10 per cent.		243		8.75
150.0	Cream, 28 per cent.	42.0		10.0	
340.0	Cream 34 per cent	115.6		20.8	
397.0 530.0	Skim milk, 9 per cent. Condensed skim milk, 27			35.8	
	per cent.			143.0	

157.6 245 209.6 8.75

The calculations necessary in determining the proportions are as follows (consider the ingredients as they are listed):

Sugar. The amount of sugar is the same as the amount calculated for the mix since there is no cane sugar in the other ingredients.

Gelatine. The amount of gelatine solution is determined by moving the decimal point one place to the left, since the solution is a 10 per cent, mixture.

Cream (28 per cent.). The 150 pounds of 28 per cent. cream does not contain more fat than is needed, hence the entire amount can be used.

Cram (34 per cent.). The amount of 34 per cent. cream can be determined by subtracting the amount of fat added by the 150 pounds of 28 per cent. cream from the total amount required and dividing the remainder by 0.34, thus:

157.5 \leftrightarrow 42 = 115.5 115.5 \div 0.34 \times 100 = 340 pounds of 34 per cent. cream.

Skim milk and condensed skim milk. From these two ingredients must come the balance of the constituents (m. s. n. f.) of the mix. To find the proportions subtract the sum of the m. s. n. f. in the cream from the total amount required and divide by 927.5 the difference between the amount of ingredients already used and the total (1750) pounds required.

thus .

For instance:

$$210 - (10 + 20.8) = 179.2$$

 $179.2 + 927.5 \times 100 = 19.3$ per cent, solids.

This gives the per cent. of solids not fat that the additional 927.5 pounds of mix must contain. To find the proportion of skim milk and condensed skim milk necessary, the "square method" is used.

The calculations for the square method are as follows:

927.5 + 18 = 5f.53 51.53 × 7.7 = 396.78 pounds of skim milk 51.53 × 10.3 = 530.75 pounds of condensed skim milk

The accuracy of the calculations can be ascertained by comparing the sum of the figures in each column with the stipulated amounts placed at the top of each column.

When this is done the ingredients are proportioned by careful weighing. The mix is then ready to be pasteurized, and homogenized.

EVAMPLE 4

Mix. Give the proportions of the following ingredients necessary for 280 galons of a frozen product testing approximately 10 per cent. fat, 8 per cent. sugar, and the equivalent of 6 per cent. additional sugar in the form of maltose sugar syrup and corn syrup,* 10 per cent. milk solids not fat, and 0.5 per cent. gelatine. The weight of the product desired is 4.5 pounds per gallon.

ILLUSTRATION OF EXAMPLE 4

	TEECSTRATION OF EXAMPLE 4								
Total Lbs. Desired, 1260	Ingredients and Composition	Fat: 10% 126 lbs.	Sugar: 8% 101 lbs.	M S.N.F. 10% 126 lbs.	Gelatine: 0.5%				
lbs.		lbs.	lbs.	lbs.	lbs.				
63.0	Granulated sugar (cane) Gelatine solution, 10 per cent. 6.3.								
151.0	Syrup, 80 per cent.								
80.0	Cream, 35 per cent.	28.0)					
82.0	Cream, 24 per cent.	19.6							
78.0	Cream, 29.5 per cent.	23 0		1 200					
64.0	Cream, 28 per cent.	17.9		28.8					
73.0	Cream, 19 per cent.	13.8		1					
59.0	Cream, 40 per cent	23 6		1					
252.5	Condensed skim milk, 25 per cent, m.s. and 40 per cent, sugar		101.0	63 0					
35 5	Skim milk powder			34.0					
322.0	Water			34.0					
1260.0		125.9	101.0	125.8	6.3				

Stock on land. Sugar, gelatine, maltose sugar syrup and corn syrup, cream (22) pounds of 40 per cent., 80 pounds of 35 per cent., 82 pounds of 24 per cent., 78 pounds of 29.5 per cent. 64 pounds of 28 per cent., and 73 pounds of 19 per cent.), condensed sweetened skim milk testing 25 per cent. m. s. n. f. and 40 per cent. sugar, and skim milk powder.

The calculations necessary in determining the pro-

portions are as follows (consider the ingredients as they are listed):

Granulated sugar. The amount of granulated sugar can not be determined until the condensed milk is proportioned.

Gelatine. The amount of gelatine solution is determined, as in example 3, by moving the decimal point one place to the left, since the solution is a 10 per cent, mixture.

Syrups. The amount of syrup is determined by multiplying 1260 by the percentage desired, thus: 1260 × 0.12 = 151.2 pounds of syrup.

Cream. Since all the different lots of cream are used except the lot testing 40 per cent, the sum of the first five lots will add 1023 pounds of fat to the mix and the balance is determined by dividing the difference between 126 pounds and 1023 pounds by the percentage of fat in the sixth lot, thus:

126.0 -- (28 + 19.6 + 23 + 17.9 + 13.8) = 23.6 23.6 + 0.40 = 59.0 pounds of 40 per cent. cream.

Condensed skim milk. The amount of condensed milk that can be used is limited by the amount of sugar it will add to the mix. Dividing the amount of sugar needed in the mix by the per cent. of sugar in the condensed milk will give the amount of condensed milk that can be used, thus:

101 ÷ 0.40 = 252.5 pounds of condensed skim milk.

Granulated sugar. Since the required amount of sugar is added with the condensed milk, no granu-

lated sugar is needed.

Skim milk powder. The amount of skim milk powder is determined by subtracting the sum of the m. s. n. f. added by the cream and the condensed milk from the total amount required plus 5 per cent,

$$126 - (28.8 + 63) = 34$$

 $34 + (34 \times 0.05) = 35.7$

The amount of m. s. n. f. in the cream is determined by multiplying the difference between the amount of cream used and the amount of fat it contains by 0.093. Skim milk powder contains on an average 3.5 per cent. moisture and 1.5 per cent. fat, consequently an allowance of 5 per cent. is made in balancing the m, s. n. f.

Water. The required amount of solid constituents having been added the amount of water needed will be the difference between the total amount of the mix required and the sum of the ingredients used.

The accuracy of the calculations can be ascertained by comparing the sum of the figures in each column with the stipulated amounts placed at the top of each column.

When this has been done the ingredients are proportioned by careful weighing. The mix is then ready to be pasteurized and homogenized.

ENAMPLE 5

Mix. Give the proportions for 220 gallons of a frozen product testing approximately 10 per cent. fat, 14 per cent. sugar, 10 per cent. milk solids not fat, and 0.5 per cent, gelatine. The weight of the product desired is 4.5 pounds per gallon.

Stock on hand. Sugar, gelatine, cream 33 per cent., condensed milk testing 10 per cent. fat, 22 per cent.

^{*}Maltose sugar syrup and corn syrup are only half as sweet as cane sugar; consequently to replace the 6 per cent, sugar it is necessary to use 12 per cent, syrup. The solids in the syrup weigh about 121 pounds.

m. s. n. f., and whole milk testing 3.6 per cent. fat. ILLUSTRATION OF EXAMPLE 5

Total Pounds 990	Ingredients and Composition	Fat: 10% 99 lbs.	Sugar: 14.0% 138.5 lbs.	M.S.N.F. 10% 99 lbs.	Gelatine: 0.5 c. 4.95 lbs
?bs. 138.5	Sugar	lbs.	lbs. 138.5	lbs.	lbs.
49.5	Gelatine solution, 10 per cent.		138.3		4 93
184.0	Cream, 33 per cent.	60.7	1	44.5	
368.0	Whole milk, 3 6 per cent.	13.2 25.0	1		
250.0	Condensed milk, 10 per cent. fai, 22 per cent. s. n. f.	25.0		55.0	

989.0 989 1385 99 5 4 95

The calculations necessary in determining the proportions are as follows (consider the ingredients as they are listed):

Sugar. The amount of sugar is the same as the amount calculated for the mix, since there is no cane sugar in the other ingredients.

Gelatine. The amount of gelatine solution is determined by moving the decimal point one place to the left, since the solution is a 10 per cent, mixture.

Cream (33 per cent.). The amount of cream can not be proportioned until after the condensed milk is proportioned, since it contains 10 per cent, fat,

Whole milk (3.6 per cent.). Temporarily omitted for the same reason.

Condensed milk. The amount of condensed milk necessary in this case is determined by using a rough estimate. From this estimate it is found that 250 pounds is about the correct amount, thus:

' Cream (33 per cent.) and whole milk (3.6 per cent.). From these two ingredients must come the balance of the constituents (fat and solids not fat) of the mix. To find the amount of each, subtract the amount of fat added by the condensed milk from the total amount required and divide by 552, the difference between the amount of ingredients already used, and the total (990) pounds required, thus:

99 - 25 = 74 $74 + 552 \times 100 = 13.4$ per cent, fat in 552 pounds of milk.

follows:

This gives the per cent. of fat that the additional 552 pounds of mix must contain.

To find the proportions of cream and whole milk that are necessary the "square method" is used. The calculations for the "square method" are as

29.4 total number of parts 18.78 × 9.8 = 18.78 pounds of cream 18.74 × 19.6 = 368 pounds of whole milk

The accuracy of the calculations can be ascertained by comparing the sum of the figures in each column with the stipulated amounts placed at the top of each column.

When this has been done the ingredients are proportioned by careful weighing. The mix is then ready to be pasteurized and homogenized.

ROUGH ESTIMATES

Whenever a mix is made from an unlimited quantity of condensed whole milk the amount of condensed milk required is determined by first making a rough estimate. For instance, in example 5. we do not know what part of the total amount of milk solids not fat of the mix must come from the condensed milk, so we try what we think is about the right amount. In this case the figure taken to begin with was 220 pounds. This figure is taken because from experience we know that about 50 per cent, of the m. s. n. f. in the mix must come from the condensed milk. That quantity divided by 22 (the per cent. of m. s. n. f. in the condensed milk) shows that it will require about 220 pounds of the condensed milk. This amount would add 24.2 pounds of fat and 48.4 pounds of m, s. n, f. to the mix.

To tell whether or not this is right simply take the difference between the total amount of ingredients already calculated (that is, the pounds of sugar, gelatine, and condensed milk) and the total weight of the mix and subtract the difference between the fat used in the condensed milk and the total amount required to find the amount of milk serum. Then multiply this figure by 9 to get approximately the amount of milk solids not fat that will come from the milk and cream, and the sum of the two will indicate whether the proportions are correct, thus:

 $990 \leftarrow (138.5 + 49.5 + 220) = 542$ pounds of milk and cream $542 \leftarrow (99 \leftarrow 24.2) = 466.0$ pounds of milk serum $466 \times 0.093 = 43.3$ pounds of m. s. n. f. from serum 43.3 + 48.4 = 91.7 pounds of m. s. n. f. in mix.

The total amount of m. s. n. f. lacks about 7 pounds, so we increase the amount of condensed milk 30 pounds, or to 250 pounds, which gives practically the right amount, as shown in the table.

In case the quantity had been increased only by 20 pounds, the figures would show about 3 pounds of m. s. n. f. less than was desired. The amount of milk and cream is then calculated as heretofore explained.

Merchants have the right to organize for their own protection, and enter into mutual agreements for the purpose of giving each other the benefit of their knowledge about those in the community who meet their obligations promptly, and those who do not; and a communication on this subject, made by a member of the association to the other members, is held privileged, if made in good faith and in such a manner and on such an occasion as to properly serve the purposes of the association, in the Florida case of Putnal v. Inman, 80 So. 316, 3 A.L.R. 1580.

Approximately 80,000 gallons of ice cream were produced in Nevada last year, and large quantities were shipped in from California and Utah, according to a report issued by the public service division of the University of Nevada.

EXPRESS RATES AND SERVICE

A Discussion of Problems Involved In the Transportation of Dairy Products

By B. W. Redfearn

Of the Live Poultry and Dairy Shippers Traffic Asa'n

From an address delivered at the annual convention of the National Association of Ice Cream Manufacturers

The origin of the express business, I am told. was in the year 1839, when a man named Harnden carried packages of jewelry, etc., between New York and Boston. This gentleman operated with a hand bag. The Fargos were also instrumental in developing this business, until today there is hardly a hamlet in the United States that is not served in some manner by the Express Company, Testimony brought out at the late hearing before the Interstate Commerce Commission indicates the enormous business which is now carried on by them, almost three hundred million dollars being received by them from revenue in the year 1919, which, of course, was divided with the railroads over which they operate according to their contracts with them, in most cases, I understand, fifty per cent. Just think of it, From a hand bag in 1839 to three hundred million dollars in 1919, and from a one-man outfit to a great system employing millions of men throughout all sections of the country.

As you know, there is now but one express company, the American Railway Express Company, which is the consolidation of all the old companies. It may have been the proper thing, from an economical point of view, under Government operation, to consolidate all the express companies into one during the war, but it has removed competition, and service and competition go hand in hand. In compiling the answers to questionnaires sent out by your Mr. Loewenstein, for use in your case, there was one thing that struck me forcibly and that was that most of those answers were qualified by such phrases as "Not since the war," or "Not since consolidation." and others in that trend; which indicated that with the removal of competition, service declined. I may be a little hard on the express company when I fail to take into consideration the fact that Uncle Sam used a great many former express employees in helping to make the world "safe for the Democrats," but the war is over, and two men are now required to do the work which was formerly done by one. This is not sarcasm, but a fact. The high wages paid by the industrial concerns during the war when help was at a premium, has done more to contribute to the support of that much used and oft times abused high cost of living. Men who were spoiled by these high wages are today walking the streets, turning up their noses, so to speak, at positions which before the war they were glad to get and then seemed to offer inducements. When you take into consideration that our soldier boys were giving their lives, the hardest work on this earth, for a mere pittance, while enormous wages were being paid to those who were fortunate enough to stay at home, and some that fought to stay at home, you can realize why there is a spirit of unrest in this country,

High wages is the cause, principally, of your decline in express service. You could hardly blame a man leaving the express company for a more remunerative position elsewhere, and the revenues of the express company would not permit them to meet those conditions. Just consider your own business, if you please. Compare your cost of labor and supplies with that of pre-war times. These high wages, as I said before, were the cause of this unrest. The laboring man struck, received higher wages-the employer was forced to add it to his product and the consuming public eventually footed the bill, and the laboring man is a part of the consuming public In other words, it was just like running around in a circle, or throwing a boomerang. From the information I received from the questionnaires referred to before, there is no doubt in my mind but that there is no other industry, unless it be the butter, eggs and poultry industry, that pays more for service and receives less than the ice cream industry. Yours is a highly perishable product and requires expedited service. There is no getting around that, but I believe that if there was a closer cooperation on the part of the express company in the handling of your business it would go a long way toward ending your troubles and theirs as regards the transportation of ice cream. But all branches of business are suffering from lack of service today and we must bide our time and do everything in our power to help. A change for the better is bound to develop. "History repeats itself" we are told. We had service once. We will get it again.

Now, as to rates: It would, indeed, become tiresome to you if I should go into detail in regard to rates. The Interstate Commerce Commission has set a standard of rates for the express company, These rates are based on three factors: "Express Terminal," "Rail Transportation or Haulage Charge" and "Rail Terminal." The first includes the collection and delivery service; the second covers the cost of transportation after it has been placed aboard the express car, and the third is supposed to cover all expenses which are not included in the first and second. These are the fundamentals upon which the present rate structure was built.

A word about your increased rates. The express company asked for a 26 per cent, increase, the Commission granted them a 12½ per cent, increase, taking into consideration the fact that the railroads with whom the express company divided had already received their increase in the freight case. The labor board awarded an increase in compensation to the employees of the express company, and the Commission allowed the express company a further increase of 13½ per cent. It is true this is the amount, they originally asked for; but, if they had received 26 per cent, originally you would have had to absorb the increase in compensation, and in all probability your total increase would have been 391/3 per cent. Your raw product, milk and cream, was increased by baggage 20 per cent. Where there were no competing rates in effect as between express and baggage, the rate was only increased 121/2 per cent. Now, when you take into consideration that freight rates were increased from 25 per cent, to 40 per cent., according to the territory in which traffic moved, you have not received such a hard blow. The commodities that I represent in our Association for the most part find their market in the East and therefore travel through the 40 per cent, territory,

As to the express rates as applied to your own business: You know more about them than I do, because I have not made a careful study of them. In comparing your rates with other commodities of a perishable nature, it appears to me that you are paying your share and more. In my opinion, the most unfortunate business, from a rate viewpoint, is the butter, egg and poultry industry. Our Association has kept busy for the past five years fighting, diplomatically and otherwise, to keep these rates on the proper level. We have been successful in getting rates reduced: then these periodical general advances come along and wipe out the saving, and the rates are back on the same level again. Take the rate on eggs, for instance, from Chicago to New York. Prior to August 1, 1919, the rate was 99 cents. This rate was reduced to 75 cents. Then the late increase of 40 per cent, came along, and now the rate is \$1.05. Dressed poultry rate was \$1.121/2, reduced to 75 cents and increased to \$1.05.

Looks like persecution, doesn't it; but if these rates had not been reduced they would now be \$1.381/2 on eggs and \$1.571/2 on dressed poultry. This is true of ice cream by express. If the rate increase had not been held down to 121/2 per cent, in the beginning you would have to pay 26 per cent. plus 131/2 per cent. There's some consolation in that,

Where there is a general advance on all competing commodities, no one is hurt; but where there is a spread between two rates on competing commodities it does hurt. I have in mind live poultry and dressed poultry. Dressed poultry originally had the advantage of 131/2 cents per hundred pounds. Dressed poultry was reduced to third class rate, changing the advantage on live poultry to a disadvantage of 24 cents, and adding the former advantage to the disadvantage made by a difference in the spread between these rates of 371/2 cents. This amount on a 20,000 pound car, as you will see, would result in a change in relation of some \$75.00 per car. Now, when you apply your general increase of 40 per cent. live poultry was increased from 99 cents per hundred pounds to \$1.381/2, dressed poultry from 75 cents to \$1.05, making the present spread 38 cents, and if you add to this the former advantage of 131/2 cents, the difference between these two commodities since August 1, 1919, amounts to some \$93.00 per car. Of course, we expect to iron out this difference; in fact we have a case before the Commission at this time. and the examiner before whom the case was tried

has recommended the same basis for live poultry that applies to dressed poultry.

I have not said much about your rates, or their relation to the value of your product; I am frank to say that I do not know and could not know without making a general study of them. In other words, I am not prepared to say to you whether or not your rates in themselves are on the proper basis, taking all things into consideration; but as I said before, from the information I have gleaned from the exhibits filed in the late express case before the Interstate Commerce Commission, you are paying you share, and more.

While the product of your industry is bearing perhaps more than its share of the burdens of transportation, your industry has one advantage over other industries in the same situation. Traffic matters are well handled only when the heat of temper does not enter into them, and your distinctive advantage is that you can always keep "cool."

MOTOR TRUCKS FIRE HAZARD

Every truck driver may have to cope with fire at some time or other so it is best to be prepared. Everyday handling of the truck tends to make the driver indifferent to the hazard of fire and the latter when it does happen is very sudden and without

All possible steps should be taken by the truck owner to prevent fires. A fire extinguisher carried on every truck is not alone a protection but it cuts insurance. One or more extra extinguishers in the garage is also good business for if the fire takes place in the garage more than one machine will be endangered

The following ordinary precautions should be followed by every driver:

Do not let oily rags or waste lie around the garage. Keep them in a metal container, and sweep the floor often. This prevents the spread of fire.

Keep the engine clean, especially the pan. See that there is a small hole in it under the carburetor

drip; if there is none, make one. Never fill the gasoline tank near an open flame. Never hil the gasoline tank near an open flame. Likewise, see that the funnel used makes metallic contact with the tank; it has happened that static electricity generated by the gasoline flowing through the funnel has sparked the tank and caused a serious

explosion.

Make sure that the tank does not leak, particularly when it is located under the cowl, gasoline connections to detect any leaks.

If not already convenient, install a gasoline shut-off here it can be reached readily. Always shut off where it can be reached readily. Always shut off the gasoline when leaving the car in the garage. A strainer should also be installed in the feed pipe if there is none on the car; and sediment should be removed once a month.

The entire electric system must be watched and the connections kept tight. A loose or grounded wire may start a fire. When cleaning the engine with a brush, use one with no metal parts; a short circuit caused by the metal on the brush may ignite the

gasoline used in cleaning.

Should a fire start in the carburetor, shut off the gasoline and start the engine, as racing it will soon draw all the gasoline from the carburetor. be thrown at the base of the flame, and when using the extinguisher, squirt it through the radiator without raising the hood,

ELIMINATION OF GERMS FROM DAIRY UTENSILS

Solution of the Problem of Producing Milk Products with Low Germ Content Lies Largely Within the Province of the Plant Operator

> By M. J. Prucha and H. A. Harding Of the University of Illinois

Abstract of Bulletin No. 230 of that station

Every milk producer is financially interested in seeing that the market is supplied with good milk because a supply of good milk will tend to increase the demand.

Milk to be good must be rich, safe, clean, and sweet. Of these four attributes, keeping quality, or the ability to remain sweet, is the most difficult to protect successfully during the production and delivery of the milk.

If it were not for the action of germ life, milk would remain sweet indefinitely. However, every time milk is exposed to dust, or is changed from one container to another, it receives germ life. This germ life living and growing in the milk breaks the milk sugar into acid and sours the milk. Accordingly the first step toward keeping milk sweet is to reduce as far as practicable the number of germs which get into it.

The number of germs which get into milk under ordinary dairy conditions is surprisingly large. The observations which have been made at various points throughout the country indicate that before it reaches the shipping station or bottling plant each cubic centimeter of milk (about 20 drops) has been seeded with at least 50,000 bacteria. In some cases this seeding amounts to more than 1,000,000 bacteria per cubic centimeter (cc.). Moreover, if the milk is not held at or near 50 deg. F. these germs begin to grow within a few hours and the numbers present increase rapidly.

The character and condition of the barn were carlier believed to be mainly responsible for the introduction into the milk of the large numbers of bacteria found in it. This belief found expression quite frequently in summary orders from health departments to milk producers either to provide better barns or quit furnishing milk for the municipal supply.

In Bulletin 199 of this station are presented the results of an extended study of the influence of different barn conditions upon the germ content of the milk produced in them. These results, which are in close agreement with studies made at the New York Agricultural Experiment Station, show that the condition of the barn, within very wide limits, exerts little or no influence upon the germ content of the milk.

These studies further point out that the influence of many of the ordinary barn practices upon the amount of germ life in the milk is measurable, but taken all together they would account for only a small fraction of the germ life which is ordinarily seeded into the milk before it reaches the milk plant.

In Bulletin 204 of this station it is pointed out that, in sharp contrast with the small amount of germ life seeded into the milk from the barn and barn operations, the utensils are an extremely important source of this germ life. Some cans which had been well washed and steamed and had been held for twenty-four hours in warm weather were so abundantly supplied with germ life that, had they been filled with sterile milk, this milk would have immediately had a germ content of over 1,000,000 bacteria per cc. The study of a large number of such cans handled in accord with present commercial practice and examined after the lapse of twenty-four hours indicates that under such conditions milk cans will ordinarily add more than 30,000 bacteria per cc. when filled with milk. Accordingly the main source of the surprisingly high germ content of milk as it reaches the milk plant is found, not in barns nor in barn practices, but in the utensils, mainly the cans, in which the milk is handled.

Having shown that the milk cans, and not the barns, are mainly responsible for the large amount of germ life added to the milk at the farm, the next problem was to find practical means of reducing the germ life in the milk cans. Data are presented in Bulletin 204 which indicate that the germ content of cans washed at the milk plant is progressively reduced when the cans are thoroughly washed, when they are rinsed with clean water, and particularly when they are thoroughly steamed. The data further show that the amount of germ life in the cans when used later at the farm is largely dependent upon the presence and area of moist surface persisting in the interior of the cans.

These results suggest that if the cans which are now washed and steamed at the milk plant are properly dried before being returned to the milk producer, the germ content of the milk later returned to the milk plant in these same cans will be markedly reduced.

While the solution of the problem of producing milk of a low germ content is thus shown to lie largely within the province of the milk-plant operator, the fact remains that under present conditions a large part of the cans returned to the producer from the milk plant are returned in a moist condition. Accordingly it is important to know what the milk producer can do with these moist, high-germ-content cans in order to best prepare them for receiving milk. Moreover the problem of the most effective, and at the same time the most practical, method of handling pails and similar utensils is one constantly present on all farms. Bulletin 230 reports the results of a study in this direction, of which the following paragraphs are a brief summary.

Rinsing is an important factor in removing germ life. The mechanical washing of pails and cans on dairy farms is both simple and ordinarily so well done as to need little comment. Following this washing there is much divergence of practice with regard to subsequent rinsings of the washed utensils with hot water. A large part of the effect of such rinsing upon the germ life has been found to result from the mechanical removal of the germs by the rinse water. The magnitude of this mechanical removal was measured by experiments reported in Bulletin 230, rinse water at 70 deg, being used. The results from such treatment of a considerable number of well-washed, eight-gallon cans suggest that the treatment is capable of removing from a can more than two billion germs.

A somewhat larger number of germs was mechanically removed by using warm rinse water; but as the temperature of the rinse water increased, the measurement of the germs actually removed was complicated by the destructive action of the hot water upon the germs. For example, rinsing with water at 205-208 deg. F. undoubtedly removes mechanically more germs than a cooler rinse water, but the destructive action of this high temperature is so great that the number of living germs found in the rinse water rarely exceeds a half-billion per can.

The killing effect of hot water is greatly reduced by its rapid cooling. The destructive effect of hot rinse water upon germ life was found in these experiments to be much less than is commonly supposed, being much reduced by the rapid cooling of the rinse water through the transfer of its heat to the utensil. Thus, when an 8-gallon can at 72 deg. F, is rinsed with a quart of water at 150 deg. E, the temperature of the rinse water falls about 40 deg. within 60 seconds. As the amount of rinse water per can is increased, the drop in temperature is correspondingly reduced, so that when four quarts of water at 150 deg. F, are added to a can the temperature drops only about 20 degrees.

When boiling water was applied to the utensils in these experiments the destruction of germ life was pronounced, particularly when more than two quarts of rinse water was used per can. Under such circumstances the combined effect of the mechanical removal and the destruction of germ life was such that if the cans had been immediately filled with sterile milk the germs remaining in such scalded cans would commonly have increased the germ content of the milk only about 100 bacteria per cc. Accordingly the fairly common practice of applying boiling water to freshly washed utensils or to moist, washed cans returned from the milk plant is to be commended. It should be noted, however, that the pouring of this rinsc water from one can to another greatly reduces the effectiveness of the practice, both because the rinse water promptly becomes too cool to exert much killing effect, and because it quickly becomes contaminated by the germ life which it mechanically removes from the utensils.

As a method of treating the moist washed cans which arrive at the farm shortly before they are needed, nothing better is available ordinarily than the thorough rinsing of the cans with boiling water. However, when any considerable interval is to elapse before the cans are filled with milk, it is of prime importance that they be promptly and thoroughly dried.

The drying of cans is surprisingly effective in reducing germ life. Observations were made upon the effect of inverting washed and rinsed cans on a rack in the sun. When the sun was hot and the air dry, the cans dried quickly and the germ life in them was promptly reduced. Cans which were only fairly well rinsed, when thus dried and kept dry were ordinarily in a condition to add not more than 100 bacteria per cc. to the milk with which they might have been filled. However, during damp or rainy weather, when moisture remained in the cans, the germ coutent held its own or even multiplied considerably.

A further series of observations was made in the laboratory by adding to sterile cans 10 cc. of water from a vat of rinse or wash water, and holding the cans for twenty-four hours, one-half of the cans with their covers on and the other half with the covers removed. In the cans on which the covers were retained, the germ life increased between 20 and 3,000 fold. In the cans from which the covers were removed, and conditions permitted rapid drying, the germ content fell promptly, but when the drying was retarded the amount of germ life remained constant or even increased.

A further series of observations was made in the the milk plant will exert a profound influence upon the germ content of the milk later returned to the plant in these caus; but when the cans are returned to the producer in moist condition, he may put them into acceptable condition by thoroughly rinsing them with boiling water, and then promptly and thoroughly drying them if they are not to be used immediately.

A TALE OF TWO CITIES By C. W. Esmond

"This place is not like a big ety," said a Middlewest ice cream manufacturer to me recently. "You can't get them to use ice eream in the winter or to use it for dessert except on a few rare occasions, such as parties or weddings. The dealers are dead so far as ice cream is concerned. They won't push it and you can't show them. I know because I've been trying for years."

During the winter season, this manufacturer gets down to his office about ten o'clock in the morning and leaves early in the afternoon.

Another manufacturer in a city half the size made this statement to me the following day:

"Christmas Day, 1920, we put out as many orders as we did on July 4 of the preceding summer. It is true that they did not run nearly nitto the gallonage of the July 4 business, but they constituted a very profitable day's business. And this example is typical of our winter business. Ten years ago when I started in here you couldn't hire people to eat ice cream in the winter time. Now every fountain in town runs all winter.

This manufacturer gets to his plant at 8 o'clock in the morning in the winter, or earlier if there is occasion. He is open-minded, alert for new ideas and when he gets a good idea he works it for all he is worth.

ECONOMICAL COMBUSTION CONTROL

Controlling Combustion On Basis of CO2 Alone

Falls Far Short of Attaining Best Possible Results

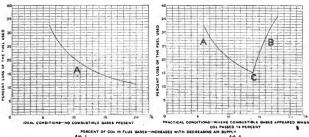
By Rowland Moeller, M. E. of the Geo. H. Gibson Co., New York, N. Y.

Furnace efficiency should be considered separately from boiler efficiency, and the master key to the proper testing of furnace efficiency is continuous gas analysis, which not only measures the excess air present at all times, but also promptly detects and measures the presence of combustible gases in the flue whenever they appear.

When coal is burned in a boiler furnace under ordinary conditions, an average of about 63 per cent. of the heat generated is used to make steam, 25 per cent, goes up the chimney, and the balance is lost through radiation and in the ashes. How important

temperature and the volume of the flue gases. The amount of heat lost in the form of chemical energy is a function of the heat of combustion of the unconsumed combustible gases and their volume. The loss of heat represented by a certain percentage of unburned combustible gases in the chimney is much greater than the loss of heat due to excess air represented by an equivalent percentage of CO.

To completely burn fuel, a surplus of air is always necessary over what would be theoretically correct. The amount of this surplus varies constantly, depending upon the many different factors



it is to hold the chimney losses down to a minimum becomes evident when we consider that every decrease in chimney losses results in a proportionate saving of heat available for steam making.

To produce steam representing 1,000 units of energy, it is necessary, on the 65 per cent. efficiency basis above described, to consume approximately 1.538 units of energy as it comes in the fuel. Now suppose the chimney losses are reduced from 25 per cent, to 15 per cent, which is not unusual, and that the 10 per cent, thus saved are turned into useful energy, making this 75 per cent, of that supplied in the fuel. Then, to produce 1,000 units of useful energy requires only 1,333 units of energy as supplied in the fuel. The difference between 1,538 and 1,333 is 205, and this is nearly 151/2 per cent. of 1,333, the fuel actually required to carry the load under the more economical conditions. In other words, the saving in fuel represents 151/2 per cent of what is necessary under the more efficient operating conditions.

Heat is lost up the chimney in two distinct forms, namely, the sensible heat of the entire volume of flue gases, and the heat represented by the chemical energy in unconsumed combistible gases. The amount of the sensible heat is a function of the that influence combustion. However, maximum efficiency under practical conditions is attained when there is just enough surplus air to make complete combustion possible, that is, combustion without the escape of combustible gases up the stack. It is that point where a reduction in the air supply results in incomplete combustion, and an increase in the air supply results in an immecessary waste of energy through the carrying away of sensible heat by excess volumes of flue gases.

An idea of the magnitude of the fuel losses due to the escape up the stack of combustible gases when the air supply is insufficient as compared to the losses due to the presence of excess air may be gained by a comparison of the curves in Figs. 1 and 2. In Fig. 1 we have a curve showing the fuel losses which take place with varying percentages of CO. (varying inversely with the excess air supply) in the flue gases, providing there are no cumbustible gases present. However, combustible gases (CO CH, and Ha) are bound to begin to form at some point as the percentage of CO is increased (air supply decreased) and, as mentioned before, losses due to the formation of these combustible gases are far greater in proportion to their volume than losses indicated by equivalent proportions of CO., This is graphically illustrated in Fig. 2, where the portion CB in the curve represents fuel heat losses that develop beyond the point C where combustible gases begin to form as the percentage of CO_2 is still further increased by reducing the air supply.

The point C is the critical point. It is the point where combustion takes place with the greatest economy in fuel consumption. It varies not only in different furnaces, but varies constantly in the same furnace.

The curves shown were plotted from generally accepted average values. On that basis, the following comparisons are interesting. Let us assume that when CO_2 is 14 per cent, combustion is taking place under conditions of maximum efficiency in the furnace. The unavoidable loss under these conditions is 15.3 per, cent, of the total fuel used. Let us assume that only 1 per cent, of combustible gases forms for every per cent, increase in CO_2 beyond this point. Taking into account the heating value of these combustible gases, calculations show that when the percentage of CO_2 reaches 15, the fuel loss is 22 per cent, and when the percentage of CO_2 has reached 16, the percentage of fuel loss becomes 28.

Many power plant engineers consider it foolish to place much confidence in CO_2 readings, and make it a general rule never to allow the CO_2 present to exceed 10 to 12 per cent. Others put it as low as 8 to 10 per cent. Under these conditions, there is likely to be a great waste of fuel due to the avoidable escape of sensible heat up the chimney. In contrast with these there are authorities who claim there is no danger of having combustible gase escape unconsumed before CO_2 reaches a point above 15 per cent.

The fact of the matter is, combustible gases may appear with any percentage of CO2, and depending on CO, records alone is therefore decidedly misleading and illusory. It is quite possible to have large volumes of combustible gases, (CO, CH, and H.) present simultaneously with a low percentage of CO, as well as a high percentage of CO2. For example, if the fire in one part of the furnace is very thick or dirty, CO would be generated in that part and escape unburned because not enough air would be going through. If, at the same time, there is an air hole in another part, air would rush through there unused. Under these conditions CO would be found present at the same time that the record would indicate excess air by a low CO. reading.

The percentage of CO₂ for economical combustion may vary considerably from time to time in the same furnace with the rate of combustion, method of firing, thickness of the fire bed, distribution and character of the fuel, draft, formation of ashes, dirt and clinkers, and many other influences which are subject to irregular variations, and which have a decided effect upon the completeness and efficiency of combustion with any given air supply.

Generally speaking, low CO₂ indicates excess air, but may also indicate that the air is poorly mixed, giving rise to a simultaneous formation of CO. It is therefore not desirable to attempt to secure a high percentage of CO₂ by cutting down the draft alone. A high percentage of CO₂ can be obtained with practically any draft, so long as it has the proper relation to the fuel bed resistance.

On the other hand, the losses due to the formation of combustible gases which are allowed to escape up the chimney without being burned are frequently much greater than the losses due to excess volumes of air, because it is quite possible to reach a very high percentage of CO₂ while simultaneously producing large volumes of combustible gases (CO, CII, and H.).

Insufficient air supply is the most general cause of the presence of CO in the stack. CO may, however, be present due to poor design of the furnaces, improper methods of firing, the coal being of a character not adapted to the equipment with which it is burned, poor mixing of the combustible gases with the air and low furnace temperature, which causes gases to be cooled below the ignition point before combustion is complete.

Occasional snap tests for CO with hand instruments to check up the CO₂ recorder have therefore proven entirely deficient in properly controlling combustion. Recording CO₃ alone has never, under any condition, given results even approaching the possibilities of economical combustion, and it is positively known that the maximum economy in fuel consumption cannot be realized by any of the old fashioned methods.

The oxygen used in the process of combustion in a furnace comes from two sources, namely, the primary and the secondary air supply. The primary air supply is that which flows through the combustible material in the fire bed. The secondary air supply is that which is admitted to the combustion chamber above the fire through holes in the fire bed, the fire doors, through leaks in the boiler settings, etc. It supplies the free oxygen necessary to oxidize the combustible gases generated in the fire bed.

The Bureau of Mines has conducted exhaustive experiments to determine what actually happens when coal is burned in a furnace. It was discovered with one fuel, that when the fuel bed is over 4 inches thick, and free from air holes, a furnace without secondary air acts very much like a gas producer. In a fuel bed 12 inches thick, where no secondary air was supplied, practically all the oxygen was consumed 41/2 inches from the bottom of the fire, At this point CO2 reached 14 per cent, and combustible gases registered 10 per cent. About 26 per cent. of the gases leaving the top of the fire were combustible gases, while the percentage of CO. was reduced to 7. Le Chatelier states that CO. generally reaches a maximum at a height in the fuel bed ten times the diameter of the coal pieces. From this point on reduction of CO, takes place.

The combustion of coal in an ordinary boiler furnace thus takes place in two stages. In the first stage, the fuel bed acts as a gas producer, producing CO and other combustible gases in large volumes. In the second stage, these combustible gases are mixed with the secondary air and the carbon in the CO and other combustible gases is oxidized to CO₂; and the hydrogen combines with oxygen to form water vapor.

Contrary to the generally prevailing impression, the volume of the secondary air required to burn coal in a furnace is greater than the volume of the secondary air required under ideal conditions would be the same as the volume of the primary air. In the first stage of combustion the reaction would be $2C + O_2 = 2$ CO. In the second stage it would be $2 CO + O_2 = 2 CO_2$. In other words, the volume of air required to convert the carbon into CO in the primary stage is the same as the volume of air required to burn the CO into CO, in the secondary stage. However, there are other gases than CO which come off in the first stage of burning coal. To burn these additional gases, secondary air is Inefficient mixing of the combustible required gases in the combustion chamber with the secondary air supply gives rise to still further demands for excess secondary air, that complete combustion may take place. How much secondary air is required depends on the furnace design, kind of stoker, method of firing, kind of fuel, etc.

Nobody can tell anything about the volume of the secondary air, where it all comes from, how much enters through the various known channels, or what its proportion to the total air supply is. It is generally recognized, however, that the one safe rule is to keep it at the least possible minimum necessary to insure complete combustion of combustible gases. This can only be done by a constant watch for the appearance of combustible gases in the flue, while holding the percentage of CO₂ at the maximum point which can be maintained without the appearance of such combustible gases.

Holes, ashes, clinkers, or dirt in the fire, thickness of the fuel bed, draft, length of time of opening of fire doors and regulation of dampers-all cause wide and irregular fluctuations in the amount of secondary air admitted. While the amount of this secondary air has such a decided and important effect on the economical combustion of the combustible gases which are formed in the fire bed, it is a most bewildering and hopeless task for the fireman to attempt to control it scientifically, or to form any conclusions, or to make estimates based on direct observation regarding the proportion or amounts of this secondary air entering at any time. To achieve efficient furnace results, some clear, simple means should therefore be provided for telling him just how much excess air is present at all times, and to give him prompt warning of the appearance of combustible gases in the chimney. Such means act as a guide for the fireman, enabling him to intelligently regulate his fires and to manipulate to the best advantage the controllable elements which determine the admission of excess air to the combustion

The best method of firing a particular furnace, and regulating the air draft and dampers, can only be determined by trying various ways and means and carefully watching the results recorded from the analysis and recording of both CO₃ and combustible gases. Only through such a procedure can the fireman learn by experience what must be done, and what must be avoided to give the maximum percentage of CO_2 at all times without the loss of combustible gases up the fue. Without such a containuous and complete record of both CO_2 and combustible gases, or with a record of CO_2 only, be is working blindly in the dark, and can tell nothing about the results of his various efforts towards attaining higher combustion efficiency.

Correct mixing of the air and the volatile combustible products of the furnace is a matter of greatest importance, and represents one of the most difficult problems of design the combustion engineer has to contend with in his efforts to cut down the amount of excess air necessary to insure complete combustion, and to reduce the possibilities of having unconsumed combustible gases escape up the chimney. Stratification, having the process of mixing take place too slowly, or premature cooling of the mixture below the ignition point—all lead to waste.

How nearly combustion in practice can reach the tideal is well represented in certain boiler plants where blast furnace gas is the fuel. By means of a multiplicity of interspersed small air and gas orifices such a thorough, intimate mixture of the fuel and air is obtained that the percentage of excess air necessary to insure complete combustion has been practically reduced to zero. On the other hand, it is not at all uncommon to find in small coal burning boiler plants where hand firing is used, that the CO₂ in the flue gas analysis registers as low as 4 per cent, showing the presence of 420 per cent, excess air.

In a paper by Ambrose N. Diehl on "Modern Methods of Burning Blast Furnace Gas Under Stoves and Boilers," the following statement appears: "In view of the fact that 1 per cent. of CO in Que gas containing 18 per cent. of CO₂, adds approximately 6.5 per cent. to the losses, and a proportionate larger amount in more dilute gases, it becomes apparent that a high degree of accuracy in the CO determination is very desirable. For this reason, efficiencies based on analyses of a CO₂ recorder are not dependable." He states further that constant gas analysis and intelligent supervision are the principal factors in obtaining continuous good efficiency and control without changes in equipment. Similar statements hold good where coal is the fuel.

Only by continuously recording the percentage of CO_2 as an indicator of the amount of excess air present, and also detecting and clearly recording the presence of combustible gases (CO, CH₄ and H₂) immediately they are present, can effective combustion control be established. By no other means is it possible to avoid unnecessary loss at all times in the combustion of fuel, either due to an excess supply of air or through the loss of combustible gases up the chimney.

Graphic records of such a combination of simultaneous gas analyses, considered in conjunction with other records and the various functions in holler room operation, not only point the way toward improving combustion in a given furnace, but are also an indispensable guide when, to improve combus-

tion, alterations or reconstructon of a furnace are considered. At such times, the grate, combustion space, baffles, arches, wing walls, dampers, settings, chimney or mechanical draft, etc., all come under consideration. Recently an instrument has been perfected and placed on the market, which not only accurately analyzes and records the percentages of CO, present at all times in flue gases, but also promptly detects and clearly records on one and the same chart the presence and the approximate proportion of combustible gases whenever they ap-Dear.

SUGAR MARKET REPORT

The following report of the raw and refined sugar market was issued under date of March 8 by Lamborn & Co., New York, N. Y .:

Official announcement has been made to the effect that the Cuban Sugar Finance Committee had consummated sales of Cuban raw sugars at the 5c cost and freight basis which is equivalent to 6.02c duty paid. Although no official announcement has been made to that effect, it is rumored that local refiners have made moderate purchases at this basis and the largest local refining interest is understood to have absorbed all offerings of Porto Rican sugars that were available at 5.96c CIF. Offerings through the Sugar Finance Committee at 5c cost and freight

are understood to be only moderate.

Similtaneously with the announcement of sales at Sc, it became practically impossible to purchase refined sugar. B. H. Ilwell, Son & Co., advanced their quotation to 8c, which was immediately followed by the Colonial, Pennsylvania and McCahan, other refiners remaining practically withdrawn from the market, with sugar no longer procurable at the 7.75c basis. Howell, it is understood, are from two to three weeks backward with deliveries, while the Pennsylvania are offering only for shipment dur-ing first half of April. McCahan are understood to be accepting no business even at the 8c basis. position of refiners as regards shipments is indica-tive of continued delay in securing supplies and even should other refiners re-enter the market at the 8c basis, there is little likelihood of the trade being able to secure much, if any, sugar for prompt shipment at that basis.

It is very interesting to note that the Cuban statistics show a rather liberal movement of Cuban sugar to countries other than the United States. According to Guma 24,000 tons were shipped to Europe last week, 2,000 tons to Canada and 12,000 cargoes of Cuban sugar have gone to the Far East and further shipments are expected.

DEVELOPING TRUE CITIZENSHIP

"Only by thorough-going public education can true citizenship be developed," declared Congressman Simeon D. Fees of Ohio, at the recent banquet of the American Citizenship League, at Salt Lake City, Utalı.

The Congressman continued:

Citizenship is not a thing that can be made by law. Men can not be legislated into patriotic American citizens. They must be educated for citizenship. In this process of American education there must be two objectives. We must teach the perpetuation of the republican form of government as prescribed by the Constitution. We must also preserve Ameri-can liberties as guaranteed in our Bill of Rights, Alexander Hamilton represented the leader who stood squarely for the preservation of the fundamentals of government. Thomas Jefferson was the conspicuous leader in our national life who stood for the preser-vation of liberty. Both were right. We must hold fast to the fundamentals while we preserve our liberties. While on the one hand we are guaranteed liberties we are under obligations to respect law and government on the other.

The foreigner who comes to this country and who remains here for any length of time, refusing to become a citizen, should be deported if he becomes a menace to free government. This government is made primarily to protect the rights and liberties of its citizens and not to protect the rights and liberties of those who refuse to become citizens.

Of course, we can not deport rebellious citizens. We can educate them to higher appreciation of a respect for law and government while guaranteeing them their rights under our famous charter of liberties. Only by a thorough-going well-worked-out system of public education can we develop true citizen-ship with respect for law and with a jealous regard for the rights of others as guaranteed by the Constitution.

The big question in education, therefore, is to find the way by which we can preserve the fundamentals of law and government while guaranteeing to each one the liberty he should enjoy. Not by law but by education can we establish American citizenship based upon the solid foundation advocated by Hamilton and the rights and liberties set forth by Jefferson.

GOOD BRAKES ARE NECESSARY

H. C. Brokaw, supervisor of the Motor School of the West Side Y. M. C. A., New York, N. Y., in a lecture, declares that no matter how good the engine on a car is, if the brakes are poor the car is bound to get into difficulties.

Each car is provided with two sets of brakes, the emergency and the running or service brake. He explains in detail the uses and abuses of the two brakes and what effect good and bad brakes have on the machinery of the car and the roads over which the car runs.

He declares that both brakes must be kept in such condition that either will stop the car at a moment's

On long hills a driver should alternate his brakes so that one will not overheat and wear out the brake lining. A smoking running brake is a sure sign that the emergency ought to be used and vice versa.

Oil sometimes interferes with the proper functioning of the brake and this according to Mr. Brokaw is due to putting too much oil in the differential case or using too light an oil. The oil works from the case through the axle housing and on to the brake causing the latter to slip. Because of these probable results lubrication is undesirable in this part of the car. But every other place on the brakes and linkage where there is motion should be lubricated regularly and kept clean.

He gives the following rules for keeping the brakes in good condition:

Keep the linkage clean and well oiled, the linings renewed and inspected. This is important in city driving because of the frequent and sudden stops due to traffic conditions.

Overheating is often chargeable to improper driving-using the low gear too long when the car should be running in high.-Motor Life.

ARTISTIC SIDE OF ICE CREAM NEGLECTED

A Few Suggestions Regarding the Artistic Presentation of Ice Cream To the Trade

> By Jacquelyn Martin Of Spokane, Wash.

From an address delivered at the annual convention of the Pacific Ice Cream Manufacturers Association

It is known throughout the world what a strong, all race of people the Americans are. Just why is it so? Why, it is due simply to the fact that we are one of the milk consuming nations. In milk are found a number of different substances, but the main and most important ones are numbers I and 2 of the unknown substances. The chemists have proven that it is these two substances that make us grow. There are some nations which are known as non-milk consuming races. These are, chiefly, the Japanese, the Chinese, the Malays, and the people of Dutch Africa. If you have ever paid any particular attention, you have found out that they are all small in stature, light in weight, and ever thin in build. This is due to the fact that they

However, a great many people do not drink milk, but they do eat ice cream. By eating ice cream, they obtain the amount of milk which they require. There are a lot of little children who simply cannot be forced to drink milk, but will goge ice cream at every chance they get. This is just as well for them, if not better, because ice cream contains a great many substances that milk does not.

do not drink milk.

Recently a very prominent dairy man of Portlow was sickly and very tiny at birth. Six months land was blessed with a baby boy. The little felafterwards he weighed two pounds less than when he was born. All the baby specialists in Portland were consulted, but they all seemed to be at a loss to know just what to do. Finally, a noted specialist from the East was called in, and he also seemed to be at a loss. The father, then, in desperation suggested, "Feed the child ice cream." The doctor, then, as a last resort, consented, and said to give him one teaspoonful of ice cream a day. The father did as directed, and at the end of three weeks the child had gained two pounds. Gradually the amount of ice cream was increased, until it got to be six tablespoonfuls of ice cream a day. Now that boy is a sturdy, large, unusually healthy child of four years.

This case received a great deal of comment among the physicians in Portland, and not long since one of the physicians came up to the father and told him of a laboring man yho had an anemic baby, and he said he believed that the only savior of this child would be an ice cream diet. He said that the family were too poor to afford it. This generous man, then, thanking God for the saving of his son's life, offered to send it to them free of charge. Today, this baby, also, is an unusually large child.

At the present time, one baby specialist in Portland alone has over forty children on this ice cream diet No doubt I have conveyed to many of you a thought of the numerous avenues for the uses of inceream, and another thought that I wish to convey to you is the artistic avenue.

A great deal of attention is given to the chemical side of ice cream, but I am alraid too little attention is given to the artistic presentation of ice cream. There really are so very many opportunities for the touch of artistry in the making of ice cream.

I feel sure that all of you gentlemen have experienced that tired feeling if you are continually brought in contact with a certain person, at a certain place, certain kinds of food, in eating your food. Now, it is just the same way with people who eat a dish of ice cream a day. Recently, they have been pushing the sales of ice cream to the children in the schools, and I know from experience that over ninety per cent, of the pupils at my school eat one dish, and more often two dishes, of ice cream each noon. Now, this soon becomes a little monotonous if you are served with the same kind of ice cream day in and day out. How much these school children appreciate a novelty in even the color scheme of ice cream is almost inexpressible.

It seems to me that the manufacturers have fallen into a rut, as far as the aristry of ice cream is concerned. The old flavors, strawherry, vanilla and chocolate, continually face one on every fountain menu. Of course, fancy ice creams are made upon special orders, but these are all too few. Now, with very little effort and additional expense on the part of the manufacturers, new color schemes could be introduced. Why, there is a never-ending variety and opportunity, as far as color schemes are concerned.

Then why not introduce new flavors and shapes? In the line of ices, one rarely finds anything other than orange, lemon and pineapple ice served. Now, there really is nothing more delicious than a dish of watermelon ice, yet it is rarely ever served. Why not use more original flavors, such as peach, and pear, and grape, and apricot, and others? Put a little more originality into your ice cream and ices. What could be more enchanting on a hot day in July than to have a dish of cool-looking Nile-green ice cream set before you? Think of the kick you would get out of eating loganberry ice, or blackberry, or currant, or raspberry ices! All these ices are almost unsurpassable when it comes to flavor and color. What would be more attractive than to have a beautiful pond-lily brought in for dessert? Just picture the green leaves curling around on the plate, with the beautiful snowy-white wax petals above, and the glistening yellow centers! Why, it would be almost too beautiful to eat, and yet too tempting to resist!

Then, as far as shapes are concerned, do you know. I believe that if fancy individual moulds should make their appearance in our school some day it would create a riot. For over five years, the plain brick ice cream has made its appearance, day in and day out, but I know that if individual moulds were introduced the pupils would be only too willing to pay the additional expense that would be necessary to acquire these.

But it is not in the schools alone that individual and fancy shapes would be appreciated. I feel quite sure it would take very well in soda fountains.

During a recent experience, when I was being teted a great deal by teas, it began to be such an every-day occurrence that I noticed particularly the ice cream that was served. I know one day that it was with great glee and delight, after having been served with the three old stand-hys for about two weeks in succession, every day, that at one tea we were served ice cream in the moulds of beautiful pink roses. I am quite sure that all of the other girls were affected in the same manner.

I will admit your manufacturer has done a great deal when it comes to the making up of fancy ice creams on holidays, but holidays are all too few and far between. Why not make them an everyday occurrence? Of course, there is the additional effort and expense for the manufacture, but the public would appreciate this and would be only too willing to stand the extra expense.

Now, I am not going any further into the details of the matter, but, rather, leave it to you gentlemen yourselves to evolve your own ideas, for, were I to suggest ways, I fear you would all adopt them, and then the originality for which you are striving would be lost.

In conclusion, gentlemen, I wish to state that I am willing to wager any wager with any firm that the firm which adopts and puts in use my ideas at the end of the year will show the biggest increase in sales.

CARELESS MOTOR OPERATION

Many machine operators have become indifferent to the potential danger in the electric switch of their direct-current motor-driven machines. Constant usage has caused this indifference and subsequent injury. They make it merely a matter of routine to start the motor by closing the switch and pushing the starting lever over slowly and stopping it by opening the switch.

Due to the failure in many cases of the starter lever to fly back when the motor is stopped, the operator gets into serious trouble if he follows his usual custom of closing the switch and incidentally throwing the line voltage onto the dead motor.

One manufacturer has overcome this defect by cautioning the operator never to close the switch until he is sure that the starter lever is back in place. Another caution is never to leave the machine when shutting down until he sees the handle fly back after the switch is opened.

N. DAKOTA ICE CREAM MEN MEET

The North Dakota Ice Cream Manufacturers Association met at Jamestown, February 9. R. F. Bridgeman, secretary-treasurer presided owing to the absence of the president and vice-president.

Prof. R. W. Washburn opened the program with an address entitled "Quality and Yield," which was followed by a discussion of the various phases of the ice cream business.

The afternoon session was spent in the various officials making reports and the election of the following officers for the coming year: President, Frank O. Knerr, Fargo; vice-president, H. C. Schulte, Mandett; secretary-treasurer, O. A. Amundson, Jameslown.

After the business meeting Prof. R. M. Washburn gave his lecture, "Stronger Citizens, How to Build Them," to a consolidated meeting of the ice cream manufacturers and dairymen.

LARGER USE OF TRUCKS URGED

Railway traffic executives in eastern territory now have before their committee a proposition from the transportation committee of the Federal Highway Council to make a larger use of the highway and motor truck in the store-door collection and delivery of freight.

Numerous meetings of the Council's committee have been held to determine the proper policy in approaching this important subject. The proposition now before railway executives is the concrete result of these meetings.

In determining the class of traffic which would conomically come under the new plan of delivery, J. C. Lincolo, traffic manager of the Merchant's Association, of New York, has had embodied in the plan of procedure the principle that store-door delivery should apply to all station or platform delivery. This would exclude carload lots delivered to sidings, but would include carload lots handled over freight platforms at terminals. In most smaller cities carload lots are seldom handled over platforms, while at New York City a large portion of the freight is so handled, whether it is carload or less than carload lot.

A motion has also been adopted to the effect that "the committee deems it most advantageous to have store-door delivery a carrier service, but at additional rates not included in the through rates." It was brought out in the discussion that store-door delivery tariffs should be published separately, similar to the lighterage tariffs of New York.

Discussion at the last conference thoroughly established the fact that this proposed service should not be an additional burden upon the railroads.

Upon the suggestion of William J. Pitt of Philadelphia, the committee has adopted a recommendation that "the carriers, to avoid congestion and delay, be urged to establish and operate, in all large cities, a store-door collection and delivery system to be performed by, or under the control of the carrier, to assume liability for the safe transfer by their representatives, a reasonable charge to be assessed for such service."

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Be On Guard! The need for watching standard bills in state legislatures from their introduction until they are passed or rejected

is emphasized by the fight the State Board of Health of New Jersey finds itself obliged to wage against an amendment tacked onto its ice cream standard bill and passed by the upper branch of the legislature, by which substitution in part of cocoanut oil for butter fat is sanctioned.

The State Board of Health is now opposing the passage of the bill in the assembly, and in a statement recently issued charges that its bill was amended without its knowledge or consent for the benefit of "certain interests." Unfortunately the board's statement does not make it clear that the "certain interests" referred to are not to be identified as ice cream manufacturers, and as a result some of the newspaper comments on the situation is likely to hurt the sale of ice cream temporarily at least.

The fact is that it was the bill as originally introduced that had the support of New Jersey manufacturers and of New York and Pennsylvania manufacturers; indeed it was drafted at a conference between the State Board of Health and representative manufacturers from the three states, the New Yorkers and Pennsylvanians having been invited to particle

pate on the ground that their shipping into New -Jersey entitled them to be heard.

For years the National Association of Ice Cream Manufacturers has wisely and actively opposed the efforts of "certain interests" to promote the sale of substitutes for butter fat for use in ice cream, and among the National Association's own definitions of adulterated ice cream is this: "If it contains any rancid or renovated or process butter, or any fat or oil other than milk fat or oil of contained eggs and nuts and the fat or oil of substances used for flavoring purposes only,"

Nothing could injure the ice cream industry more than legalizing the debasement of ice cream by use of substitutes for butter fat. And if it was possible for "certain interests" to slip over an oily amendment in the New Jersey legislature it is possible the same thing may be tried elsewhere. It is a menace against which ice cream manufacturers everywhere should be on guard constantly.

Develop Close in for Profit time, through the work of the American engineering profession and the power of the public purse, certain parts of this great expanse of aridity have been turned into oases.

Bountiful fields dot the once desert plains and humanity supposedly profits thereby—or will eventually. How great the profit is or may be sometime can be judged only by a deep study of agricultural economics. For many of us it is a question whether the capital and effort invested in "reclaiming" these arid regions would not have paid higher dividends, and that sooner, if devoted to making fertile worn-out and unimproved lands nearer to our judistrial centers.

This question may not interest directly the average manufacturer of ice cream. But a like question can be and in some cases has been raised in our industry—namely, is it advisable to extend business development effort far out into lean territories when right in the shadow of the factory lies fertile undeveloped sales territory?

It is no more true that business is profitable wherever it can be found than that crops are profitable wherever they can be grown. The cost of developing business in lean territory is high, and it is coming to be recognized that delivery and other service costs in such territory constitute a heavy drain on the already narrowed profit earned in close-in territory.

STUDY COLUMN

The questions nere asked are based on statements contained in the issue of last month. The reference may be found in an article, or possibly an editorial, but it is there. Can you answer these questions?

- 1. Discuss the advisability of wholesome manufacturers of lee cream delivering small packers to retail customers.
- 2. What are a number of advantages of the fivegallon system of distributing ice cream?
- 3. Should there be an additional charge for reicing?
- 4. What is an effective device to keep gasoline elean?
- 5. What is babblit metal? Give its composition.
 6. There are four fundamental requisites in a lining alloy. What are they?
 - 7. Discuss the European sugar situation.
- 8. In arranging a load on a truck, where should the heaviest part of the load be placed?
- Discuss the equipment and ingredlents required for a plant making from 100 to 200 gallons a day in factories where steam and refrigeration is furnished.
- 10. What is being done legally in the different states to better working conditions of employees?
 - 11. Discuss the sugar situation in Holland.
- 12. When and where does the 1918 Revenue Act state the ice cream tax return shall be made?
- 13. Name a number of advantages of the proposed undistributed earnings tax.
- Discuss the Department of Labor's analysis of the course of living costs during the period from June 1, 1914, to December 31, 1920.

NEW DEPARTMENT ESTABLISHED

Reduction of distribution costs and the working out of improved methods of distribution will be two of the most important aims of the new Department of Domestic Distribution of the Chamler of Commerce of the United States which has just begun to function.

"More practical and sensible methods by which we as a nation could distribute our products, and help to bring about a reduction of the price of commodities," according to Alvin E. Dodd, manager of the new Department, formerly director of the Retail Research Association, of New York.

While not prepared to announce definitely the nature of all the activities which the Department will undertake, Mr. Dodd outlined the following important problems which will be taken up:

Establishing an information service to answer questions on Domestic Distribution for Chamber of Commerce members and others.

Studying the activities of Trade Associations at present in the field of distribution.

Analysing methods of distribution followed by all the important industrial groups covered by the Department, and contributing data as a definite attempt at elaritiving and making more efficient our processes of distribution.

Co-operating with trade associations in outlining educational campaigns, disseminating a better knowledge of the problems and economics of distribution to the general public and to those within the field of distribution. Analysing the requirements of the distribution field for facts and trade statistics which could be reasonably collected and given wide distribution.

Analysing of and co-operating with schools, colleges and universities having courses in business administration, etc.

Merchandise, according to one definition, has not been "produced" until it is in the hands of a satisfied consumer. But the Domestic Distribution Department of the United States Chamber must regard merchandise as having been "produced" when it leaves the factory, ready to be shipped to the jobber, to the retailer, or to the consumer; in other words, when the merchandise is ready to go into a warehouse or freight car or some other place in which it will be kept until ready for distribution.

We may consider, therefore, that the costs of distribution are represented by the following items:

- (1) Storage, insurance, interest on the money, transportation, and other charges between the time that the merchandise leaves the factory and goes to the wholesaler or other middleman, or to the retailer or direct to the consumer.
- (2) Sales department of the manufacturer, including the cost of advertising.
- (3) Profit and expense added by the wholesaler, if there is one.
- (4) Profit and expense added by the retailer.

One of the constant purposes of the Department of Domestic Distribution will be toward the reduction of these expenses, wherever they are discovered to be unnecessary, by the suggestion of commonsense, practical methods. It is, of course, evident that these problems will be attacked in a manner not to conflict with or duplicate the work of other organizations, but rather in the spirit of being of the largest possible service.

Already the new Department has begun an inquiry to discover practical methods by which the expense of doing business may be reduced so as to keep pace with the cuts in sales prices.

This inquiry will deal with the actual readjustments being made in meeting price declines and will result in giving American business men å summary of the most practical and successful plans which have been used to meet this situation.

CUTTING DOWN SPEED

The plant manager who uses motor trucks to and from the railroad stations or to dealers is interested in the speed of these trucks. This is one of the incentives for his purchasing the trucks.

With this speed however he must see that his drivers are careful, for speeding will land them in court. Careful driving prolongs the life of the truck. Proper instruction will correct any of these tendencies toward speeding and help to save the wear and tear on the truck.

Mechanical means may also be used to obtain a record of the actual speed at which the truck is run. There are instruments that can be attached to the truck to give this information. This will obviate any chance of the driver thinking he can fool the boss.

QUERIES' REPLIES COMMENTS

Insulating Brine Pipes

Insulating Brine Pipes

Please give me the merits and advisability of placing the following materials on brine pipes as insulation:
Wrap strips of heavy duck cloth approximately 4 inches were provided to the proximately 4 inches executely with cord and coal the canvas with hot pitch. Wrap two thicknesses of roofing paper over enavas, tie with evoil and coat with pitch. Wrap strips of duck over duck in opposite direction, the and cover with pitch.

These papes are situated so that it is impossible to inches the pipes are situated as that it is impossible to inches the pipes are situated as that it is impossible to inches papes are situated as that it is impossible to inches papes are situated as that it is impossible to inches pipes are situated as that it is impossible to inches paper and the pipes are situated as that it is impossible to inches paper and the pipes are situated as the part of the pipes are situated as the pipes are invalidable as the pipes are situated as the pipes are situated as the pipes are pipes pipes are

We are advised by an engineer thoroughly familiar with insulation problems that the plan outlined in your letter would give but little protection, and it is suggested that if possible, you treat the pipes as follows:

Cover first with tar-paper, next with 1-inch hair felt securely tied with cord, then another wrapping of paper and another layer of the felt. Finish with a layer of paper and paint it, or give a final wrap of duck and paint it for a better finished and more permanent job.

Preparing Cake Chocolate For the Mix

Can you tell me town to prepare sake theodase for checo-late ter cream so it will not hump. I have been heating in a double boiler enough for a 40-gal, batch at one time, then add a gallon or two of heated mix and sit as thoroughly as batch but it usually comes out speckled after freezing, but in such fine appeals that straining through cheese(old doesn't in such fine appeals that straining through cheese(old doesn't

In note in the August number, on page 68, under 'Pere-paring Celatine for the Mix, 'you advise mixing the gelatine heat to 140 degrees, and then add to heated mix. Is it preferable to boil the water? and the second of the top of the second of the second of the second of the We use 18 per cent, home for cream without reducing. We use 18 per cent, home for cream without reducing. We use 18 per cent, home for cream without reducing. We can be a second of the second of the second of the Cerem has trained and the second of the second of the Our customers kick and call it sour. We can't seem to find any sweet cream on the market, is here anything we can times 5 oz. of pure high grade vanilla but can still get the mosty take.

Your method of preparing cake chocolate for your mix is the cause of the speckled condition of your ice cream after freezing, caused by the adding of heated chocolate to your mix. This defect may be overcome by melting your cake chocolate and making a chocolate syrup with sngar and water, bringing it to a boil, stirring continuously, and then cooling until the syrup is around 50 degrees Fahrenheit. Then add this cooled syrup to your cold ice cream

The method reported in the Query and Comment section on page 68 of the August issue of THE ICE CREAM TRADE JOURNAL has been found by a large number of ice cream manufacturers to be a successful way of preparing gelatine for the mix.

The average amount of sugar used in ice cream is from 12 to 15 per cent. Some manufacturers have used less during the sugar shortage but they have found that less than 12 per cent, does not make an ice cream that is sweet enough.

Concerning your poor cream difficulties, the only remedy is to find a better cream market. You cannot make a good piece of goods out of old, raneid

cream. We believe that you can find a better sweet cream market, even though you are compelled to get it from a greater distance.

Sandy Ice Cream

We are having trouble as different times with sandy ice cream. We make our own condensed, we were running 3.1, but since we had trouble we are making 25.4. Now we hought our trouble was in our condensed, but could there thought our flowing the sand trouble was in our condensed, but could there our man letting certain bathets on machine too long. Now we just had some ice cream that was in the hardening room don't think we have too much solids in our mit. We have 35% solids, 12% fat and 12% sugar. Would but as defined only the country of the sand of the sugar with the sand of the sugar with the sand of the sugar with the sand of the sand of the sugar with the sand of the sand of the sugar with the sand of t

Where condensed milk, especially sweetened condensed, is used it is generally believed that the sandy defect in ice cream is caused by crystallization of milk sugar. This crystallization is caused by the insolubility of milk sugar. The ratio of milk sugar to water in sweetened condensed milk is about 1:2 while for complete solution it should be 1:16.

This defect does not always show in the condensed product, but appears in the ice cream after it is hardened. The reason for this is that milk sugar is soluble in 6 parts of cold water and in 21/2 or less of boiling water. In other words, the colder the product becomes the more water is required to keep the milk sugar from crystallizing out.

We do not believe that letting your cream remain too long in the freezer is the cause of your trouble. However, pasteurizing your whole batch at one time instead of pasteurizing your products separately might alleviate this trouble. Likewise if your ice cream is sold soon after hardening you will no doubt eliminate a large part of this defect, as it has generally been found that sandiness increases in direct proportion to the age of the ice cream,

You state that your ice cream contains 34% solids, 13% fat and 12% sugar. We take it that you mean the 34% to be total solids which is not too high.

It is generally believed that condensing high acid milk will cause sandiness. However, no evidence has been brought forth to prove this point,

Shrinkage In Ice Cream

We have had a great deal of trouble lately with our ice cream mixing the control of the control of the control of the are not getting any greater percent of the control of the are not getting any greater percent of the control of the proper amount 100 per cent and are puzzled to this single of ice cream. If you are able to enlighten us any in this matter we certainly will properly appreciate same. D. K. C.

We take it you mean that the shrinkage of your ice cream occurs while it is in the hardening room, that is, this trouble is apprehended when the caus of hardened ice cream are removed from the hardening rooms for packing.

If, as you state, your ice cream contains solids sufficient to stand up with 100 per cent, overrun, then your trouble, no doubt, is that you are either freezing your ice cream too soft or not hardening it quick enough.

Why Is Milk White?

Will you outline to me why is milk white? I would like to have your advice on it as we have had a dispute on that subject S. B. J.

On the subject of the color of milk, Paul G. Heineman, in his book entitled "Milk," says in part;

"Normal milk is an opaque think ranging in color from yellowish-white to nearly white, the color due partly to a yellow pigment in the fat, partly to the reflection of light by the fat globules, and also to the colloidal casein. . . The light is reflected by the globules in all directions, so that the linid becomes opaque and white. . . The colloidal casein also contributes towards the capacity and whiteness of milk. Separator milk, containing but 0.1 per cent, fat, is still opaque and white, and a 3 per cent, solution of pure casein in lime-water resembles skimmed milk in appearance."

CORRESPONDENCE

Teiling Tells How To Increase Sales

Editor THE ICE CREAM TRADE JOURNAL:

I am glad to note the many articles contained in your valuable paper and see how all agree on the food values in ice cream, and it behooves every manufacturer to read these articles, and pick out the known facts and adhere as closely as possible to them and tell the public (which is our greatest asset, the value of ice cream as a daily food. Many in the past have thought of ice cream loomes known, and the people realize it, we may have confidence that the sales will increase many fold.

Starting in the milk business in 1881, when milk at five and six cents a quart was considered high, and many farmers sold their milk at nine to eleven cents per gallon, little did we think it would develop to the enormous size as we now see it and become perhaps the greatest and most beneficial industry in the United States.

The ice cream industry is only in its infancy now, and as time goes on, it is bound to increase.

Now, then, it is up to us (the manufacturers) to give the public ice eream in the best form possible for home use. Therefore, the wisest as well as the most sanitary way is in brick form. Placing ice cream on the market in the brick has many advantages for all concerned.

First, the manufacturer will hear little or no complaint about shrinkage.

Second, the dealer can sell the same number of gallons he buys, and can let his small boy wait on the trade while he is doing something else.

Third, the customer has the advantage of not having to wait for someone to dip out hard cream when the small boy can wait on many customers in the same time.

We have tried this idea for some time, and are convinced the extra 20 cents per gallon for brick has been sufficient to pay all extras incurred in its manufacture and defivery. We are now equipped with the equivalent of 92 40-quart machines at our main factory in Cleveland, Ohio, perhaps the greatest capacity of any one plant in the world and ascribe our success first to quality, then service, and the greatest variety of fancy centre brick cream in the world. Our assortment is almost unlimited in the different designs and combinations so that the public may never tire of them, and these are made very easily.

The arrangement we have jermits us to make the centers for 80 quarts at one time and without loss of cream or sherbets, which has much to do with the cost, besides the advantage of always having assortment on hand. The use of water tees, sherhets and puddings also saves much butter fat, and by placing these in the faucy centers the ices do not leak and run out as when we used to make brick in layer form.

Now the three layer brick, I believe can be improved on greatly by having the lines between the tlavors straight, which makes the brick much more attractive. Many places I have visited seem not to care about how the brick looks, but I think this a mistake. It can be easily remedied if a little care is taken.

It is conceded by all that it pays to advertise; and it is good advertising to have the goods reach the public in the best possible form. Therefore we believe it good advertising to have a nice package, and to change the combinations often with different designs for centers. By this way of doing, the people will not tire of the ice cream as a desert and will become more readily inclined to ice cream in their daily die

We are now using a machine which will cut quarts or pints or slices eight or ten to the quart. This does away with much hard work.

We invite all manufacturers to visit our plant and see our arrangement and I believe all will profit greatly.

W. E. TELLING,

Pres. The Telling-Belle Vernon Co. Cleveland, Ohio, March 1.

REPORTING ACCIDENTS

At the Westinghouse Electric and Manufacturing Company all small industrial trucks now have liceuse numbers. This is to make it easy to report accidents.

Formerly serious accidents occurred and the victim had trouble in reporting the truck and driver sufficiently well to identify him.

It also has an effect in making the drivers more careful now that identity is easily established.

Vanilla beans to the amount of 1.127,055 pounds were imported into the United States in the ten months ending with October. This was an increase of 55,000 pounds over the corresponding previous period.

Working for the best is better than hoping for the best.

BOOK REVIEWS

Audel's Answers On Refrigeration

The art of obtaining temperatures above that of the surrounding atmosphere is as old as the dawn of history, but methods of keeping temperatures below the surrounding atmosphere are comparatively modern. It is with a view to giving the student or practical man a comprehensive reference book by which he may acquire a familiarity with the first principles of natural philosophy involved in the processes of this modern art that 'Audel's Answers on Refrigeration' is published.

Quoting from the introductory, Gideon Harris, the author of this practical treatise on refrigeration and ice making, has aimed to make the work one of instruction and reference, not only detailing the present status of the art but it has also been his aim to arrange the subjects separately and in natural order, like the successive steps of a ladder leading to a height from which could be viewed the whole science, as though it were a single landscane.

The 1921 reprint of "Audel's Answers On Refrigeration" has just been issued by its publishers, Theo. Audel & Co., 72 Fifth Ave., New York, N. Y.

Outlines of Dairy Bacteriology

The eleventh edition of the "Outline of Dairy Bacteriology," which was published late in 1920, has been fully revised and brought up to date in all the fields of dairying in which the bacteria are important. The authors of this concise manual are H. L. Russell, Dean of the College of Agriculture, University of Wisconsin, and E. G. Hastings, Professor of Agricultural Bacteriology at the same University. The book is published by the former at Madison, Wis.

"Outlines of Dairy Bacteriology" tells in simple language the facts which the successful operator must know and use, discussing in terms he can understand the relation of bacteria, yeasts and molds to milk and its products.

Three Companion Volumes

Three companion volumes on production, management and industrial problems have recently been published by the A. W. Shaw Company, Chicago, Ili. They are: "The Management and the Worker," "The Way to Greater Production" and "Working Conditions. Wages and Profit"

The three volumes are designed to present a complete picture of the common problems that arise in handling human relations in any business, large or small. The method of treatment throughout is the one that seems logically suggested by the nature of the problem itself, the editors of the volumes having gone to successful managers for their successful policies and plans and as often as is consistent with adequate presentation of the subjects, plans are described by the users themselves.

"The Management and the Worker" is designed primarily for those who face the problems of employee management. Special emphasis has been placed upon the details of applying various plans and methods to everyday factory conditions. The reason for this is, according to its preface, that the plan itself, without the necessary information to put it into operation is very often little short of no plan at all, for in many instances the success of any plan depends, to a large extent, upon the manner in which it is presented to the employees and the methods by which it is applied.

"The Way to Greater Production" shows how successful labor managers have combated this vexing problem. It points out specifically how they have organized workers most effectively and explains scores of ways to help miskilled and skilled men, women and boy workers to discover their own possibilities and produce more efficiently.

"Working Conditions, Wages and Profits" discusses the advantages and disadvantages of each wage system: day, piece rate, bonus and so forth. The question of profit sharing, too, is analyzed from the experience of a wide number of concerns; the reasons for success as well as failures are fully described. It shows exactly how to develop team work, direct the force in action, figure labor costs more accurately and help keep the force up to standard by better working conditions.

Elements of Trade Acceptance Practice

The American Acceptance Council, 111 Broadway, New York, N. Y., recently published a pamphlet which presents as briefly and in as simple words as possible the elements of trade acceptance practice. In the preparation of this booklet care has been taken to avoid technical discussion and digressions which might interfere with a concise statement of ordinary and correct procedure in the settlement of merchandise transactions by the trade acceptance method. No attempt has been made to amplify a subject which has already been comprehensively treated, but rather to restate basic, governing principles in condensed and convenient form.

The author of "Elements of Trade Acceptance Practice" is Robert H. Bean, executive secretary of the American Acceptance Council.

TO PREVENT PRECIPITATION

Many processes of manufacture call for passing liquids through piping, during which passage the liquid has a tendency to precipitate any solids it may contain and so allow the pipe to become clogged gradually. A suggestion for overcoming this under some conditions may be found in the method employed by one manufacturer to avoid the same precipitating action.

In this case the pipe is arranged so as to revolve continuously while the liquid is passing through it. It does not revolve fast, but the slow turning about on its own axis serves to keep any precipitate stirred up and free from the inside of the pipe. Inasmuch as little power and practically no attention is required to revolve it, this idea may help some manager out of a difficulty.

NEWS OF ICE CREAM FACTORIES

Readers are requested to send for this department authentic news of intention to build, improve or add equipment to plants; changes in control, and other items of interest about plants and the business.

ARKANSAS

Camden—F. Ford, of Magnolia, plans to install a new plant here in the near future. The factory will be located in the Myar block on W. Washington st. CALIFORNIA

Jackson—The Jackson Ice & Bottling Works is installing an ice cream department in its plant, which it expects to have in operation April 1.

Los Angeles—The L. J. Christopher Co., 2115 S. Los Angeles St., is planning to creet a three-story building adjoining its present plant, which will be equipped with modern ice cream machinery.

San Francisco—The Acme Ice Cream Co. has been incorporated with a capital stock of \$1,000,000 by B. M. Gunn, J. C. Hughes, Eric O. Lindblom, Julian R. Brandon and C. O. Swanberg.

DISTRICT OF COLUMBIA

Washington—The Chapin-Sacks Corporation recently received a building permit to erect an addition to its building at 52 M St., N.E., at a cost of \$25,000.

Brunswick—The Glynn Ice Cream Co. has recentby-been organized and has purchased the Perfection Ice Cream Co. The plant is being enlarged to a capacity of 1,000 gallons a day, adding new equipment including a 10-ton York compressor, 25 h.p. motor and Emery Thompson motor driven freezer. The officers of the new company are: President, B. J. Ford; vice-president, E. L. Stephens and sectreas, H. Ralph Smith.

ILLINOIS

Effingham—The Smith Ice Cream Co. has been organized by W. T. Smith and S. L. Smith. The company has leased a building at 421 S. Banker St., which has been remodeled into a modern ice cream plant with a daily capacity of 500 gallons.

Elgin—The Louis Blum Co., 15 Douglas Ave., recently installed a 10-ton vertical single-acting enclosed refrigerating machine and high side complete.

Litchfield-Marshall & Lawrence, of Springfield, plans to establish an ice cream plant here.

INDIANA

Warsaw--Harry Nye has opened an ice cream factory here.

IOW'A

Newton—S. F. Meel plans to enlarge his ice cream plant and install additional equipment.

Oelwein—C. A. Fosselman & Co., of Waverly, is installing a 5-ton Vilten compressor and storage rooms in its branch plant here.

Ottumwa—Celania Brothers, 305 E. Main St., recently installed a 6-ton vertical single-acting beltdriven enclosed York refrigerating machine and high pressure side complete.

MARYLAND

Baltimore-The City Dairy Co., having merged its milk business with the Western Maryland Dairy has disposed of the good will of its ice cream business of over 600,000 gallons to the Hendler Creamery Co. Asa B. Gardiner will continue as President of the Western Maryland Dairy. L. M. Hendler, President of the Hendler Creamery Co., states that his company will enlarge its plant erecting an addition to accommodate a new laboratory and additional office space. The new laboratory will face the street with a front of glass so that all operations will be in view of the public. An additional 150 tons of refrigerating is being installed in the plant; also the company expects to add 20 electric trucks to its fleet, six of which will be of 5-ton capacity and the balance 31/2-ton capacity.

Baltimore—The Crane Ice Cream Co., of Philadelphia, has taken over the Frederick Ice Cream Co., 1224-26 Greenmount Ave. The latter firm, after being completely re-organized, is now operating as The Crane Ice Cream Co. of Baltimore, with A. H. Baumgartuer as general manager. The company plans to build a large ice cream plant on a site to be selected in North Baltimore. It is expected the building operations will be started in the spring.

Frederick—The Nicodemus Ice Cream Co. has been organized by the Nicodemus Brothers. The new company is building and equipping a large plant on E. Patrick St.

MASSACHUSETTS

Lowell-William A. O'Malley, a resident of Dracut, has purchased a part interest in the Cameron Brothers Ice Cream Co.

Lym-Lynwood Ice Cream Co. has been incorporated with a capital stock of \$50,000 to manufacture ice cream for the wholesale trade. J. Herman Haines is treasurer and general manager of the new company.

Montello—The Liberty Ice Cream & Confectionery Co., 685 N. Main St., plans to install additional equipment including a 10-ton ice machine.

New Bedford—The Tip Top Ice Cream Co., 1800 Acushnet Ave., was recently purchased by Simon Beserosky from Zeol Roy, Albert Rocheleau and Archie Gingras.

North Adams—The Berkshire Ice Cream Co. has been incorporated for \$75,000 by Fred M. Hosler of Albany, N. Y., George H. Healy, of Troy, N. Y., and Jerry J. Siciliano, of North Adams.

Springfield—Tait Brothers have recently completed the addition to their plant and are installing new equipment, including two 500-gallon glass-lined mixing and pasteurizing tanks, also seven 1000-gallon jacketed glass-lined ice cream storage tanks furnished by The Pfaudler Co., Rochester, N. Y.

MICHIGAN

Dowagiac—The Dowagiac Ice Cream Co. has been incorporated with a capital stock of \$15,000.

MISSOURT

St. Louis—The Larmore Ice Cream Co., 3912 Easton Ave., recently installed a 10-ton vertical single-acting belt-driven enclosed York refrigerating ma-

chine and high side complete; also one 60-quart direct expansion Davis-Watkins freezer,

NEBRASKA

Hastings—George D. Koon and Earle Bruce have purchased property at 119 Burlington Ave., on which they plan to erect an ice cream factory.

NEW YORK

Brooklyn—The Jack Frost Iee Cream Corporation has been organized by F. C. Henry Hesse, Henry L. Holsten and J. D. Scheffer. The new company has taken over the plant formerly operated by S. Liebmann's Sons at Coney Island.

Brooklyn—The Sachter's Ice Cream Co., 30-34 Little Nassau St., has increased its capital stock from \$10,000 to \$100,000.

Brooklyn-F, G. Steffins has installed in his ice cream manufactory at 1302 Kings Highway, a 4-ton vertical York refrigerating machine.

Brooklyn—The Pure Cream Products Co. has been incorporated for \$3,000 to manufacture ice cream by Harry Baum, 692 Stone Ave., and Benjamin Ehrlich, 2426 Mermaid Ave.

East Patchogue—The Smith Ice Cream Co. is remodeling its factory and installing additional equipment, including a third Emery Thompson vertical freezer, one 150-gallon Emery Thompson mixer and an 8-ton refrigerating outfit. A 5000-quart capacity hardening room is being installed in the plant.

Greenport-Frank Claudio and Manuel D. Gloria will establish an ice cream plant on Sixth St.

Hornell—June's Creamery Co. has purchased a two-story brick building adjoining its present plant, in which it has installed an ice cream plant with a daily capacity of 1,000 gallons. New machinery installed includes an 8-ton horizontal Creamery Package ice machine.

Ithaca—The Tompkins County Dairymen plan to build an ice cream plant at a cost of \$100,000,

Jamestown—The Levant Ice Cream Co. has taken over the plant of the Harris Ice Cream Co. The company will operate in the Harris plant until fall, when it plans to build a new factory.

NORTH CAROLINA

Asheville-The Carolina Creamery Co. has enlarged its plant thereby doubling its capacity.

Kinston—S. C. Sitterson contemplates installing new ice cream equipment.

Raleigh—The White Dairy Products Co, has contracted with the Baltimore Construction & Supply Co, Baltimore, Md., for the installation of a 25-ton Frick enclosed type refrigerating machine, together with brine circulating system and hardening room piping.

01110

Bowling Green—The A. E. Hughes Dairy Co. contemplates the installation of new equipment, including two holding tanks.

Bryan—The Bryan Ice Cream & Ice Co. is installing a 10-ton and a 20-ton York compressor and has changed its distilled water ice plant into a motordriven raw water plant. The company contemplates the installation of a mixing tank of two to three hundred gallon capacity.

Mt. Vernon-The Jewell Ice Cream & Milk Co.

has installed one 12-ton vertical single-acting beltdriven enclosed York refrigerating machine and high pressure side complete.

Sandusky—Fred A. Martin, ice cream manufacturer, has added to his refrigerating equipment one 8-ton vertical York refrigerating machine and high side complete.

Xenia-Chas. Scott, 414 E. Main St., plans to install a cold storage plant in his factory.

OKLAHOMA

Altus—The Altus Ice Cream Co. has added a brick addition, 90 by 140 ft., to its factory. The company is enlarging its refrigerating capacity, adding another hardening room of 2000-gal. capacity and installing one 46-ton single-acting York refrigerating machine, direct connected to a Corliss valve engine, and condensing side, including flooded atmosphere ammonia condensers, also a 25-ton flooded freezing and distilling system.

Chickasha—The Chickasha Ice Cream Co. has been purchased by Ernest L. Lindsey and will be operated by him in connection with his Coca Cola bottling works. The new company will be known as the Coca Cola Bottling & Ice Cream Co. Mr. Lindsey is putting about \$10,000 worth of new equipment in the ice cream plant including a homogenizer, two pasteurizers, an additional freezer and a refrigerating machine for a hardening room.

Hugo—The Hugo Ice Cream Co. is building a modern plant at a cost of \$50,000, which will be equipped with up-to-date ice cream machinery including refrigerating plant for ice making. E. N. Ward of Fort Smith, Ark., is president of the company, and Henry Knox of this city is manager.

Norman-The White Mountain Ice Cream Co. has been incorporated with a capital stock of \$15,000.

Sapulpa—The Sapulpa Ice Cream Co. has bought a two-story building, which it plans to equip as an ice cream plant.

PENNSYLVANIA

Allentown—Peters & Jacoby Co.'s new ice cream plant located at Church and Maple sts., is about ready for operation. The new factory is 60 by 100 ft. in size and three stories high, and is equipped with modern machinery. The hardening room capacity of the new plant is 7,000 gallons.

Altoona—The Sugar Bowl Confectionery and Ice Cream Co., Messrs, Trivelas and Pantazes, proprietors, 1508½ Eleventh ave., has purchased a threestory brick building at 1418 Eleventh ave. The building will be converted into a modern ice cream and candy factory.

Johnstown—The Galliker Ice Cream Co., 451 Franklin st., has been incorporated with a capital stock of \$250,000.

New Castle—The English Ice Cream Co. has been purchased by Messrs. Wilder and Curry, both of New Castle.

Reading—The Fries Ice Cream Co., 136-144 Maple st. is making extensive additions and installations. The company has built a loading platform and drive-way on the north of its present plant, 110 by 60 ft. In the former shipping department a new hardening room 24 by 10 by 11 ft. and ante-room 22 (f. 6 in. by 6 ft. 9 in. by 8 ft. has been erected by John R. Livezey of Philadelphia, Pa., pipe being installed by the York Mfg. Co. The company also installed another 300-gal. pasteurizer, including refording thermometer, one can drain trough and sterilizer furnished by the Cherry-Bassett Company and two Miller freezers furnished by the H. H. Miller Industries Company.

Waynesboro—Grove Bros, are enlarging their ice cream plant and plan to install new equipment.

Woodlawn—The Woodlawn Sugar Bowl Co. has installed in its ice cream department a 6-ton York refrigerating machine.

TEXAS

Brady—O. A. Schill has leased the Dutton building, which he will convert into an ice cream factory. Mr. Schill expects to have a modern ice cream plant in operation by April I.

Brownsville—The Brownsville Ice Cream Co. will be opened by 11. C. Gould, formerly of San Francisco, Cal. The new plant will have a daily capacity of 500 callons.

Dallas—The Bordecker Manufacturing Co. 521 S. Ervay st., recently installed one 12-ton and three 30-ton vertical single-acting belt-driven enclosed York refrigerating machines and condensing side with one 16-in by 7-ft, vertical ammonia dier-cooler purifier.

Eastland—J. L. Whisenant has just opened up a new ice cream plant here. The Creamery Package Mfg. Co. furnished the refrigerating equipment and the Meyers Dairy Supply Co. the balance of the equipment.

Orange—The Mills Ice Cream Co., of Port Arthur, contemplates building a \$10,000 ice cream factory on Front st.

Ranger—The Hub Ice Cream and Storage Co. has been incorporated with a capital stock of \$50,000 by W. J. McFarland, J. W. Jennings and H. G. Lay.

UTAH

Price—The Salt Lake Ice Cream Co. plans to build a modern ice cream plant.

Price—The Crescent Ice Cream Co., of Salt Lake City, has taken over the Price Ice Cream and Cold Storage plant here.

Salt Lake City—The Crescent Cream Co. has changed its name to the Crescent Ice Cream Co. and increased its capital stock from \$25,000 to \$50,000. Daniel Alexander is president, and J. Frank Ward secretary.

WASHINGTON

Seattle—The Seattle Ice Cream Co., 2400 First ave. S., has been incorporated with a capital stock of \$150,000.

WISCONSIN

Berlim—Jesse Marvin, F. Feiner, Sr., and N. C. Muckerheid have incorporated a company for the manufacture of ice cream and other dairy products. The new firm has leased a building and equipped it with modern machinery.

Burlington—The Kellogg Ice Cream Co. has installed new ice cream machinery and has just completed enlarging its hardening room, giving the company 1,500 gallons increased storage capacity.

Janesville—The Shurtleff lee Cream Co. has just completed the remodeling of its plant, which includes an additional 6,000 gallon hardening room, artificial ice storage, new electric freight elevator and mastic floors. Two new trucks have been added to its service flect.

Janesville—The Cronin Dairy & Ice Cream Co. plants to build a \$20,000 addition to its present plant, enlarging its hardening room capacity. The company contemplates the installation of new ice cream machiners.

Kenosha—The Kenosha lee Cream Co. is reported to be planning to build a new ice cream plant, which will be equipped with a complete refrigerating system.

Madison—The American Ice Cream Co., 525 University ave., plans to install additional equipment including a 500-gal, mixing tank. The company also plans to add two trucks to its delivery equipment.

Plymouth—The Brannon-Krohn Ice Cream Co. has been incorporated with a capital stock of \$20,000.

Shehoygan—The Sheboygan Dairy Products Co., 936-940 N. Water st., plan to install additional hardening room capacity; also a 500-gal, holding vat.

Waukesha—D. A. Williams, of the Williams-Counsel Co., and D. S. Howell are planning to incorporate an ice cream company here. They expect to build a new two-story plant at Arcadian and Hartwell aves.

WYOMING

Cheyenne-The Cheyenne Creamery Co. is adding an ice cream department to its plant,

TRADE NOTES

New Ice Cream Can Washer

The Creamery Package Mfg. Co., 61-67 W. Kinzie St., Chicago, Ill., has just placed on the market a new ice cream can washer that will wash, rinse, sterilize and dry ice cream cans, can covers, molds, etc.

To operate the machine the lever at the feed end of the machine is turned on and the caus are laid in on their sides, open end towards the pumps. An endless conveyer grabs the utensil and carries it forward at the rate of 5 to 10 cans a minute, past the jet heads in the washing compartment and rinsing and sterilizing compartment, thense to the drain and drying table.

The cleansing solution water at a temperature of 140 deg. F. is shot into the inside of the can under a pressure of 30 lbs, per square inch, while under-neath and overhead jets rinse the outside of the can. In the rinsing and sterilizing compartment clean water at a temperature of 170 deg. F. is shot into the can also under a pressure of 30 lbs. per square inch.

The machine is built in two sizes. The No. 1 or largest size has a capacity of 10 cans per minute on high speed, and 8 cans per minute on low speed.

In planning for the future, don't forget that old Mr. Hindsight is a pretty good prophet. The No. 2 size has a capacity of 5 cans per minute on high speed, and 4 cans a minute on low speed.

A. Daigger & Co., Chicago, Ill., recently appointed John B. Nichols as its New England representative. Mr. Nichols was formerly with the Davis Ice Cream Co., Boston, Mass.

Mojonnier Bros. Co., 739 W. Jackson Blvd., Chicago, Ill., has established a brauch office at 136 W. Peachtree St., Atlanta, Ga., with R. S. Jennings in charge

The C. Nelson Mfg. Co., 23rd and Division Sts., St. Louis, Mo., recently completed a 50 by 100 foot 3-story addition to its plant.

The Ozark Milk Products Co., West Plain, Mo., recently opened a modern plant for the manufacture of evaporated milk.

The E. C. Bishop Co., 523-524 Lemcke Bldg., Indianapolis, Indiana, industrial accountants, plan to specialize in dairy products accounting.

The Consolidated Glue & Gelatine Co., 143 N. Fourth St., Philadelphia, Pa., has taken over The Casada Products Co. The company will continue the full line of gums as heretofore, as well as all grades of pure food gelatine.

REFRIGERATING MEN MEET

The tenth annual meeting of the American Association of Refrigeration will be held in Washington, D. C., New Willard Hotel, Friday and Saturday, March 25 and 26, 1921, and will be one of the most important ever held by the Association.

At this meeting the tentative plans for reorganizing and adjusting its functions to carry on the purposes outlined for the Association as the federated organization, to be known as the American Association of lee and Refrigeration, will be developed into a complete permanent plan designed to represent the entire refrigeration interests of the United States, and to carry out the purposes in such a manner, as to obtain the best results for all represented in the Federation.

An interesting program has been prepared and speakers of National prominence will address the members on subjects pertaining to the field of activity of the Association and other topics of interest.

CATALOGUES, ETC.

J. F. NICKERSON, Secretary.

The Gifford-Wood Co., Hudson, N. Y., recently issued an illustrated circular depicting its line of ice tools, elevators and conveyors.

The Cincinnati Extract Works, 422-424 W. Fourth st., Cincinnati, Ohio, issued under date of February 5, 1921, its wholesale price list J-2, covering Reyam Brand fruit products and supplies.

Emery Thompson Machine & Supply Co., 271-275 Rider ave. New York, N. Y., has published a Io-page illustrated booklet entitled the "Emery Thompson Circulating Brine Base Freezer."

The John Wood Mfg. Co., Conshohocken, Pa., recently published an illustrated folder stating its new price schedule for Electric Weld ice cream cans.

WANTS, FOR SALE, ETC.

Advertisements under this head, six cents a word each insertion, classification head and address not to be counted. Minimum charge \$1.00. Remittance Must Accompany Order. Help and situation want ade will be given one insertion free.

STITATION WASTED -I am very districts of controlling with the controlling to the controli

STECKTION WANTED—By an ice cream maker thoroughly acquainted with all the details of modern ice cream making. Also capable of handling help. Address H. F. N., care The Ick Laean Taste Jotansal.

SITUATION WANTED—As freezer man in large plant, four years' experience; can come at once. 12. C. Herreman, Eagle River, Wis.

SITUATION WANTED—As manager of large ice cream plant; wide experience in all details of manufacture by modern methods and sales. A good executive. Give full particulars in first letter. Address T. O., care The Ice CREAM TRADE JOREANS.

SITUATION WANTED—College graduate with 5 years' experience in mindern plants wants position as assistant manager or taking charge of manufacturing end. Thoroughly acquainted with all angles of dairy industry. Address Quality, care Title like Karam Tana Jourant.

STECATION WANTED—Having complete knowledge of creamery and fice cream misaness would like position as superintendent or see cream maker. Have and can produce results. A-one references furnished. Address A No. 1, care The Lee Clean Table JOHNSL.

SITUATION WANTED—By capable man as superintendent or manager of small plant, who is thoroughly familiar with all branches of the business. Three years experience; also short scientific course. Married, 32 years old. Address J. J., 344 Fifth ave., Troy, N. Y.

STITATION WANTED—As factory superintendent by capable man with practical experience in a modern ice cream factory. Fully understands the different branches of the business. Address Capable, care The Ice Cream Trade Journal.

STITUTED WASTED—As manufacturing manager of an icc cream plant. Familiar with all the details of the game, University graduate with nine years of practical experience in the dary unitistry. Can produce quality and show results. Address M. L., care Title IN CREAM TRADE DIWENT.

Signation Wange—By agricultural school and college short course graduate position as received maker. Understand calculation of total solids standardization, pasteurization and other work connected with slary and ice cream work Prefer New York and adjoining states. Address B. O. R., care Tite Ice Cream Table Journaly.

HELP WANTED A man capable of taking charge of milk plant, familiar with operation of vacuum pan, making ice cream mix, etc. C. A. Connor Ice Cream Co., Inc., Ownson, Michigan.

HEIP WANTED—Ice cream maker wanted to handle entire manufacturing operations of 100,000 gallon plant. State age, married or single, experience, education, nationality, qualifications, locations part 5 years, reference, and handless library, additions limited by the let Carlot Page. 100 MARCH.

HELF WANTED—Superintendent or foreman for ic cream and butter plant in city of 40,000 population in lowa. Modern equipment. Man must be Al, with good references. Good salary and opportunity in acquire interest your experience and your present or last salary. Address M. E. B., care THE IR CHEAM TABLE OUTSAIL.

HELP WANTED—First class ice cream maker for modern ice cream plant. Must be capable of taking entire charge of of work. Plant at present time making about 150,000 gallons yearly. Steady position and chance for advancement for right man. Write stating salary desired and of the plant of the plant in the plant of the plant in the plant of the p

possible enclose photo Address W. A. Hood, P. M. Dairy Company, San Diego, Calif.

HELP WANTED—Permanent position as assistant foreman for ice cream maker who can handle motor driven freezers in large factory with big production. State age, married or single, wages desired, references. Address V. W., eare The Ice Cream Transe Journal.

Foa Sale-Two Meyers icing truck bodies. Further in-formation furnished on request. Elmira Ice Cream Co., Elmira, N. Y.

Foa Sale-One Progress belt driven 40-qt. ice cream freezer. In very good condition; will sell cheap. Aurora Ice Cream Co., Aurora, Ill.

FOR SALE—New Creamery Package ice cream freezer parts for style "E" continuous, also used freezers and pasteur-izers. Price right. Address L. N., care THE ICE CREAM TRADE JOURNAL.

Foa SALE-One Emery Thompson vertical freezer. Practically as good as new. For eash price write the Licking Creamery Company, Newark, Ohio.

For SALE—Three new Cherry Model "I" 60-qt. freezers, motor driven. Rich Ice Cream Co., Buffalo, N. Y.

FOR SALE—One Miller batch mixer, 150 gallon capacity, ex-cellent condition. The Crescent Creamery Co., St. Paul,

FOR SALE—Having closed our plant we offer subject to prior sale one 150 h. p. water tube boiler, heavy steel stacks for \$1,500.00; boiler pump 6x4x6; Union pump \$100.00; water pump Duplex 6x4x6 for \$75.00; water pump Duplex 5x3x3

for \$50.00; one 300 h. p. Hoppes open exhaust water beater, fine shape, for \$150.00; one 100 h. p. exhaust water beater, \$125.00; one 20 ton Wolfe Linder refrigerating machine, steam driven, can be belt driven with high \$82.00 lb. cans complete with York fittings for \$1,500.00. Address H. Roth Brewerp, Monongabels, \$250.00.00.

For Sale—Two Miller motor driven ice cream mixes. One a-twin, the other a single. Capacity 150-gal each. Supplee-Wills-Jones Mills Co., 1523 N. 26th st., Philadelphia, Pa.

Foa SALE—Two 300-gal, vitrified porcelain pasteurizers, used one month. Creamery Package vats. Lawrence Ice Cream Co., 937 W. 21st at., Chicago, Ill.

Foa Sals.—Three 40 qt, upright C. & B. improved freezers, complete with copper cans, good condition, cheap. Also 500-5 gallon tubs newly repaired and painted \$3.00 each. The flutchinson Co., Cedar Rapids, Iowa.

For Sale-Manton-Gaulin homogenizer, 60-90 gal. per hour, in first-class, serviceable condition. Price \$400.00 cash, f.o.h., Bloomington, III. Snow & Palmer Co., Bloomingf.o.h., E

Foa SALE—Three Emery Thompson upright freezets, one belt driven, other two motor driven, 60 cycle 2 phase sale without motor. All machines in good condition and for sale cheap. Binghamton Ice Cream Co., Binghamton, N. Y.

Foa Sale-Immediate shipment on ice making plant consisting of new ice tank, made of steel, complete with 115-300 lb. ice making cans, frame and covers and insulation, brand new one year ago. 7 x 14 H. & C. belt driven compressor with

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For Sales-Homogenizer, 80 and 200 gal, sires, 100 gal, viscolizer, 3, 5 and 600 gal, belt and motor drive vats, 30 and 100 gal, Perfection batch mixes, 130, 200 and 300 gal. Perfection batch mixes, 130, 200 and 300 gal. Perfection batch mixes, 130, 200 and 300 gall perfection batch and perfect and perfect and perfect and perfect perfect and perfect perfect

Empire starter can (mixer) 100 gal, \$150. Three hundred and twenty-five 20-0t. standard ice cream cans 6t \$1.25 each. Write for fuller descriptions of items that interest you. II. Schlotthauer, 140 W. Kinzie st., Chicago, Ill.

For Sale—One Reid mixing vat size one hundred fifty gallon, good condition, motor driven. Cherry-Prast Ice Cream Co., 213 E. North st., Danville, Ill.

For Sale—One Reid pasteurizer size one hundred fifty gallon, good condition, motor driven. Cherry-Prast Ice Cream Co., 213 E. North st., Danville, Ill.

WANTED TO ILLY-Forty-quart Miller helt drive ice eream freezer. Must be in first-class condition. Address T., care The Ice Chean Track Journal.

Wanteo to Bry-A 5 or 6 foot vacuum pan. Also two or three 500 to 1,000 gallon pasteurizing vats. C. A. Connor Ice Cream Co., Inc., Owosso, Mich.

WANTED TO BUY-lee cream plant. Any plant making under 100,000 gallons per year not considered. Will build plant if we can find good location. Address W. M., eare THE ICC CHEAM TRADE JOURNAL.

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GETTING OUT OF DIFFICULTIES

The rainy season always sees a great many cars and trucks stuck in the mud. With this picture in mind, the Motor News printed this advice to drivers:

The terrors of a self-dug grave can be reduced by keeping in mind this fact: the slower a wheel

turns, the more traction it has.

Now, assuming one to be in a place with no tract-tion; clear away any stone, large sticks or other solid impediments, and lay straw, twigs or other similar, material—the English always carry a strip. of chicken wire for awkward situations-in front of the wheel which is doing the slipping, and put the gears in low. Only speed your motor sufficiently to take the clutch without stalling. Then cautiously slow down the engine until either one of two things happens: the car moves or the engine stalls.

If the engine stalls, start it again and begin all over. If the engine stalls, start it again and orgin an over. If the car starts, repress the impulse to step on the accelerator, keep the engine turning slowly. If the engine stalls when you are half-way out of the hole, be ready with your brake. Put your hand brake on enough to hold the car from slipping back. if possible, or better yet, have someone behind with a block or brick to block the wheel against slipping

If the brake is used to hold the car, which will be the case if all alone, do not release it before engag-ing the clutch when you try again. The engine has power enough to turn the wheel slowly, even if the brake is on. As soon as it has taken hold, release the brake

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a bog, if anything on earth will,

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Make a Clean Job of Washing Dirty Cans



Make a clean, easy job of your dirty, disagreeable canwashing, and you will insure cleaner cans, quicker washing, less washing cost and no more trouble in getting someone to do that kind of work.

The machine that gives you an easy, clean way to do this dirty work is the

Perfection Ice Cream Can Washer and Sterilizer

Slide the dirty can over the brush (concealed under the splash-hood). The revolving brush, with scalding hot soap, soda and sterilizer solution forced thru it by a powerful pump, scrubs the can clean inside, in a few seconds.

Remove the can and stand it, inverted, on the fourarmed rinser bracket. The weight of the can opens the rinser valve so that both hot water and steam thoroughly rinse out the inside of the can. When rinsing is complete, the operator shuts off the water by a hand-valve and allows the live steam to sterlize and dry the can.

Built to wear, at a price of economy, the Cherry Perfection Ice Cream Can Washer and Sterilizer puts an end to one of your biggest problems.

Write for illustrated printed matter.



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Mojonnier Milk Tester Model A for butter fal and total solids in all dairy products. Process patented, Apr. 2, 1917; Apparaius patented Feb. 5, 1918; Apr. 9, 1918; June 11, 1918, and Aug. 5, 1919. Other patents pending.



36" Vacuum Condensing Unit, capacity 185 gallons finished mix per hour. Floor space 7½x9½ feet, 11 feet high,

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These are some of the results you will obtain by the installation of a

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Mojonnier service goes with each condensing unit. This includes the best method of installing, operating and instruction in the manufacture of milk. ice cream mix and all forms of condensed milk.

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THE C-B CALENDAR



Perfection Standard Horizontal Brine Freezer, Motor-driven, with a Thomas Automatic Batch Measure mounted on It Instead of the old style batch lank. To know more about the Thomas Batch Measure, write for a booklet.

they are unique in this respect, as they won't clog up. It is possible to clean the brine chamber as often as you wish.

If a Tub Freezer meets your requirements, familiarize yourself with our machines before making a selection. We have a variety of models-belt or motor-driven, with or without crusher, etc., and a range of capacities.

To learn full details of each machine consult our ice cream catalog. If you haven't one, send for it.

but not every kind of freezers. Good freezers-exceptionally good-are the only kind we dare offer our customers. For upon the freezers depends the success or failure of the business, and we want our customers to succeed, for selfish reasons, of course! And by good freezers we mean machines that don't need repairing continually; that operate efficiently under all reasonable conditions; that are designed correctly for producing good ice cream; that are built with a thought for the operator and his convenience; and machines that will operate economically,

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General Laboratories

Sole Mfrs. B-K.

DOC Makes 5 Barrels For \$3



GENERAL DISTRIBUTORS

Some people think disinfectants are expensive. But, really, it is the most economical method known for destroying bacteria. The biggest dairy concerns in the country use it freely for it saves muscle grease and provides absolutely sterile equipment. Hence it helps prevent spoiled, off-flavored and sour products.

Because Germ-X comes in a highly concentrated form, a gallon of Germ-X will make 5 barrels of solution for effectively sterilizing vats, churns, and similar equipment. It should always be put in rinsing water for bottles, cans, utensils, etc. Is fine for destroying unpleasant odors. Heals cuts, bruises, etc.

Write for free sample and free directions for using. Or send \$3.00 for trial gallon or \$12.50 for 5 gallons. Address:

THE CREAMERY PACKAGE MFG. COMPANY

CHICAGO, 61-67 W. Kinzie St. BUFFALO, N. Y. 133-137 E. Swan St. KANSAS CITY, 1408-10 W. 12th St. MINNEAPOLIS, 318-320 Third St. 8t. OMAHA, 113-115-117 S. Tenth St. PHILADELPHIA, 1907 Market St. PORTLAND, ORE, 6-8 N. Front St. SAN FRANCISCO, 699 Battery St. TOLEDO, 119 St. Clair St. WATERLOO, 406-8 Sycamore St.



The Secret of Better Ice Cream

Lies in the perfect homogenizing of the mix

The

The Gaulin Homogenizer

THIS was first accomplished in America by the Gaulin Homogen-izer and since its introduction, the ice cream business has been a stabilized, progressive and prosperous industry. Like all good and revolutionary machines, the Gaulin has had a flock of imitators, who accomplish in an indifferent way what the Gaulin does perfectly, i.e., turn out an uniformly homogeneous product of unexcelled smoothness, under all conditions.

The Gaulin Homogenizing Valve vs. Others

The Gaulin Homogenizing Valve is a spring valve-is patented—and can be used by no other. The Gaulin Valve may be set at any desired pressure and the pressure will be maintained, without constant attention from the operator. Others are prohibited from using a spring valve and/hence must use a rigid valve. As there is no give to the rigid valve, it gets clogged with foreign particles at frequent intervals and the pressure raises. An operator must watch it con-stantly and open it up when clogged. Hence the mix is not uniform-part is homogenized too much and part is not homogenized enough, THE DAVIES CREAMER does for the small or moder-The spring valve on the Gaulin, however, automatically permits foreign particles t pass. Hence absolute uni-formity of pressure is maintained and the

Gaulin product is perfectly homogeneous. smooth and velvety. Write for

"Story o f

the Homogenizer.

ate sized ice cream plant what the Gaulin Homogenizer does for the large manufacturer, i.e. enables him to turn out a product that is smooth, velvety and homogeneous. Furthermore, it enables him to manufacture cream from its component parts when a

Little Brother to

the Gaulin Homogenizer

restore it in both flavor and texture equal to raw cream.

The Davies Creamer also thoroughly clarifies the mix, resulting in a superior tasting product. In addition to the type illustrated, the Creamer is built in the elevating type and will raise the product to a height of 25 or 30 ft., if desired.

shortage occurs. Or the ice cream maker can freeze cream when it is plentiful, put it in storage and then when it is needed pass it through the Davies Creamer and

Manufactured by THE MANTON-GAULIN MFG. CO., Boston, Mass. THE CREAMERY PACKAGE MFG. CO. Distributed

CHICAGO, 41-7 W. Kimis St. MINNEADOLS 311-20 N. Thrid St. SAN FRANCISCO, 619 Battery St. BIPPACA, 312 S. BAN FRANCISCO, 619 Battery St. KANSAS CITY, 1461-10 W. 12th St. FUHLADRIPHIA, 1997 Market St. WATERLOO, 464-8 Sycamore St. FUHLADRIPHIA, 1997 Market St. WATERLOO, 464-8 Sycamore St.

ICE CREAM AND MILK CANS RETINNING

TURN YOUR RUSTY CANS INTO GOLD

Why discard an ice cream or milk can or any tinned can or kettle which is all there except the protective coating.

Our process of re-tinning puts on a heavier coat than the can had originally, so you have better can equipment at a fraction of the cost of new cans.

We straighten and repair your cans and tune up the shape, restoring all the original value of the can.

Send us a sample today and we will retin it gratis and return to you at once to show you our class of work and also, how much gold you can save.

SANITARY TINNING & MANUFACTURING COMPANY 3753-3759 E. 93rd Street Cleveland, Ohio

MILLER CHRAMERY COMPANY

OAKLAND, CALIFORNIA

Moritz Smith, 1035 Third Avenue, Hew York City, N. Y.

Dear Sir:

For cometine passed we have been using your Cyclone Jos Cream Cutters in our San Francisco Brench, the same being ordered by Mr. George K. Goebler, who was at that time, our manager.

e. Our boys say it is giving satisfaction, and we are writing to place an order for two more of the same size, one of them to cut 8 to the quart and one to cut 10 to the quart. Please ship to us by express to Catland California. We believe we have made ourselves clear in regard to the eige.

We use what is known as the Western Style. a two gallon brick mould. Insemuch as you have already made one for us in San Francisco, there should be trouble about the size, as we want the same with the szosytion that we want one mobine to out 8 to the quart, and the other 10 to the quart.

Please ship both machines as coon as possible.

Yours very truly.

FEW/O



MILLER'S QUALITY ICE CREAM

Cyclone Brick Cutters

Your chance to meet

Competitors on equal basis

Lose no time to learn Of our product-Write

Now-Do not delay.

E verybody communicate with

LOUIS CUMMINGS Successor to M. Smith

1035 Third Ave., New York City

Read What Users Say



MILLS IMPROVED FREEZER

ALL STYLES AND SIZES OF ICE CREAM FREEZERS

STEEL PACKING CANS CEDAR TUBS ICE BREAKERS **BRICK CUTTERS**

Repairs for V. Clad & Son Machinery

THOS. MILLS & BRO., Inc. Confectioners, Bakers and Ice Cream Tools

1301 N. 8th STREET, PHILADELPHIA SEND FOR CATALOGUE OF ICE CREAM TOOLS



BRICK CUTTER



A New Catalog For You

Write for "1921" catalog with new schedule of EMERY THOMPSON prices.

The high point of view about the E. T. price reduction is the corresponding increase in value of the EMERY THOMPSON Brine Freezer.

While there is very little, if any, noticeable change in the cost of finer metals, we are able to meet this reduction through our greatly increased manufacturing efficiency which has developed a comparatively higher rate of production.

Will be pleased to send you this year's catalog—just out.

Emery Thompson Machine & Supply Co.

271-275 Ryder Avenue

(6-8 Canal Place, Bronz)

New York City

HOW DO THE
NEW EXPRESS
RATES
EFFECT YOUR
SHIPPING BUSINESS?

THE GLACIFER DRY PACKER

OFFERS A READY SOLUTION

ICE CREAM SHIPPERS SHOULD INVESTIGATE

THE GLACIFER CO.

102 Merrimac St.

Boston, Mass.

Southern Tinning Company Johnson City. Tennessee

We Offer:

Prompt Service The Best of Work Moderate Prices

The Only Retinning Plant in the South LET US HEAR FROM YOU

EVERY Ice Cream and Milk Handling Plant, should not fail to investigate the superior merits of the famous

Leffel Scotch Marine Boilers

built in a variety of sizes from 6 H. P. to 100 H. P., and to meet all requirements of the different State Boiler Laws. This Boiler is confidently offered as meeting in fullest measure and most satisfactory manner, every requirement of the trade, as amply proven by the large number of pleased customers using them for many years.

This Company also builds a line of Vertical Boilers in sizes 3 H. P.

Complete catalog with information of interest and value on request.



JAMES LEFFEL & CO.

SPRINGFIELD. OHIO

RETINNING ICE CREAM CANS

A Special Departmen We do refinishing of old ice cream cans in a special department of our plant which devotes its entire time throughout the year to doing this one thing

and doing it well.
Old Cans
Made New
At Lew Cost
AND PAYS YOU

And we do know how to fix up your otherwise hopelessly rusty old cans so they will be tight and bright and good as new. IT IS NOT EXPENSIVE AND PAYS YOU A DIVIDEND. The government recommends retinning of old cans as a measure of economy.

Sample Can Retinned Free This is the time of year to send cans in for renewal. Send us a sample can NOW. We will repair and retin it without charge and return it promptly, so you can see the quality of our work. Write us when you ship it, so we will know whose it is, and we will do the rest.

OAKES & BURGER CO.

ESTABLISHED 1878

CATTARAUGUS, N. Y.

FLAVOR TAGS FOR ICE CREAM CANS



ABBOTT'S ICE CREAM "Try it, You'll Always Buy it"

STRAWBERRY



VANILLA



SUPPLEE
ICE CREAM
HAS A BETTER FLAVOR

CHOCOLATE

The above Tags are used on regular packing cans and are held in place by pressing the Lid down and allowing Tag to project. We manufacture them in any size, color or quantity. State quantity wanted each flavor and we will mail samples and prices.

Our Factory is equipped with the most improved automatic machinery for manufacturing SHIPPING TAGS of every description.

Printed one or two colors one or both sides, wired, strung or with brass eyelets as desired, in any size, quantity, quality or color.



Clark & Company

MANUFACTURERS OF

SHIPPING TAGS

1613 N. Third Street

Philadelphia, Pa.

BUY

The Quality Tub Covers

BEST BY TEST

MADE BY

SCHOTT BROS. CO.

WEST SALEM, OHIO
Pioneers in the Manufacture of Tub Covers

ESTABLISHED 1845

LOWN & SON

POUGHKEEPSIE, N. Y.

Manufacturers of Ice Cream Tubs for 60 years

Sizes: 1 Ot, to 50 Ots. Always In Stock

Special Sizes for Cabinets or Packing to Order

TAG HOOKS

Why use expensive, untidy, time-losing strings or wires while tagging your tubs or pails of ice cream?

SNAP 'EM ON

And use our rustproof TAG HOOKS

Save Time

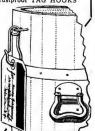
or the value or a man's time while trying the tags on your tubs.

Can't Rust

Our new type of Tag. Hooks are

Our new type of ag Hooks armade of SPE CIAL SPRING BRASS. They sel at \$1.95 per hundred by the special special

DALY BROS., Schenectady, N. Y.











Your Cans last longer and cost less if the famous Dairymen's Cans are used.

Mail Coupon for Our Low Prices





Genuine Cedar Tubs

are built to last and give uninterrupted service.
Compare the securely splined double bottom,
firmly wedged into place, with the ordinary
tub and you'll agree that Stout tubs are
superior.
Write for Stout literature
and prices before you buy.
CRATE CO., Des Plaines, Ill.

STOUT CRATE CO., Des Plaines, Ill.

What About Paint?

—for your Tubs and Cabinets

OMPETITION will be keen next summer. Appearances will count. Brine-eaten hoops and staves may cripple the plant when business is best.

ARLINGTON TUB ENAMELS are Brineproof and made to withstand hard knocks, abuse and exposure.

ARLINGTON BRINEPROOF ASPHALTUM gives absolute protection to the inside of tubs (also metal-lined cabinets) for an entire season in spite of heavy pounding.

Both products are money savers for the Ice Gream Trade. We will match your special color.

The Arlington Mfg. Co. Technical and Industrial Paints

CANTON, OHIO -



(ADDRESS)

Ice Cream and Its Ingredients

The many things that enter into the making of a finished ice cream are so important that the manufacturer cannot afford to lay stress on only a few of them. He should thoroughly investigate everything which goes to make up quality and increase sales.

The butter fat content of ice cream is important, but he cannot neglect the sanitary and cleanly conditions and expect pure and wholesome ice cream to be the result.

This is why those who are interested in quality and have experienced increased sales are using



since the aptitude of this cleaner thoroughly and sanitarily

Indian in

cleans and adequately protects the finished product.

Your supply house will be glad to fill your order.

THE I. B. FORD CO .. Sole Mfrs.

Wyandotte, Mich.

CHAMPION TUB COVERS

Are the Covers To Buy

High in Quality Low in Price

Buy direct from the Manufacturer-it pays

Samples and prices on application

The Fabric Products Company Anything of Canvas Oshkosh, Wisconsin

TUB COVERS



TARPAULINS, etc.

Samples and prices on application

Clifton Manufacturing Co.

Everything in Canvas

Texas Waco

CAN-PRO-CO



The Highest Class Cover

on the Market

Made from heavy, doublefilled duck. They will outdistance any cover on the market.

Buying "Stay-On" Tub Covers is the Remedy Against All Cover Evils

SHRINK PROOF

MILDEW 'RUST '

Your Regular Supply Man Has Them THEFT BRINE

RINE '

RAT WATER

FOOL

Illustrated Folders and Prices on Request

Your Regular

Supply Man

Has Them

CAN-PRO-CO APRONS

are a necessity

Order from your dealer

Canvas Products Corporation

19, 21, 23 E. McWilliams Street Fond Du Lac, Wisconsin

BIG REDUCTION IN PRICES OF ICE CREAM CANS PRICE SCHEDULE READY

(Repeat Orders Now Coming In Prove Worth and Quality of These Cans)

Ice Cream

"Three Pieces Welded Into One"

NO SOLDER NO RIVETS NO LEAKS

"The can of UTMOST UTILITY."

Electric Weld Ice Cream Cans are practically seamless being made complete in the black plectric Well (see Cream Cams are practically seamless being made complete in the biases and then tinined by soaking in pure straints tim. In addition to their strong, study construction due to welding, they can be retined over and over again at small cost due to the absence of solder and the fact that they are practically one piece. Note the special features as shown in the illustration.



TEN BIG FEATURES:

- 1-Low cost.
- 2-Absolutely sanitary, no solder, no lead to contaminate contents. 3-Adaptability to retinning. Easily
- and cheaply retinned-do it yourself.
- 4—Eliminates the leak nuisance. Bottom and cylinder welded into a solid mass-can't leak.
- Strength where needed.
- -Rust-resisting metal. -"Non-deforming" lid.
- "Non-deforming ito.

 -Exact capacities, standard dimensions. Lids interchangeable
 with all standard makes of cans, embossed with your name, ca-pacity in quarts, liquid.

 9—Quick delivery from our eight warehouses — Boston to San
- Francisco.
- 10-Endorsed by leading manufacturers.

Electric Weld Cans for service. Send us a trial order for these cans and satisfy yourself now before investing money in the old style, wasteful riveted and soldered cans.

(FULLY PROTECTED BY PATENTS PENDING)



Branch Offices:

TORONTO, CANADA BIRMINGHAM, ALA.

SAN ERANCISCO

NEW YORK CITY CLEVELAND

LOS ANGELES

PHILADELPHIA CHICAGO

ADDRESS ALL COMMUNICATIONS TO MAIN OFFICE

CONSHOHOCKEN, PA.



The Package Sells the Product

THE successful distributor of ice cream realizes the advantages obtained when his product is packed in an attractive, attention-compelling carton-and as a consequence a great many distributors use designs of particular brilliance and attractiveness.

Unfortunately, it has been impossible for the small and medium sized distributor to secure a package, at reasonable price, that would accomplish the same purpose. He had to be satisfied with an inferior, printed carton that carried neither attention-compelling value, nor merchandising quality.

Now, we have made it possible for this smaller distributor to secure a package of equal beauty, carrying every advantage that any large distributor can claim. We have produced seven wonderfully designed ice cream cartons, printed in four colors and finished in the high gloss wax. Space is provided on each panel for the imprinting of the manufacturer's name and brand. making the carton he selects distinctively his.

We can supply these cartons in any quantity at a price so low that it is as reasonable as the cheap-printed carton. Write today for samples, literature, and prices. Prepare to do a bigger, better, finer-quality ice cream business during 1921, Please address Department. 83.

CARTONS FOR

Ice Cream Butter Oleomargarine Lard Pork Sausage Bacon

Sutherland Paper Co., Kalamazoo, Mich.

CARTON

Use Sealright Containers

FOR BULK ICE CREAM

THEY fit better into your business than any package brought out in recent years. The "mix" for cream packed in Scalright Containers is the same as for your regular run of bulk cream. Placed in the hardening room they can be kept indefinitely for sending out to the dealer or the home. Earl superior to the brick methods, no cutting, in fact, Scalright Containers, in cutting, in fact, Scalright Containers, and the superior to serve bulk ice cream in small, neat, individual packages, sanitary to the highest degree. There is an interest of the superior carry—the dealer can more efficiently and profitably handle a larger volume of trade. The use of Scalright Containers has increased over five-fold in a single year. Both manufacturers and dealers testify that Scalright Containers year naturally but Scalright Containers is naturally that Scalright Containers Sur antarrally that Scalright Containers Sur antarrally that Scalright Containers Sur antarrally that Scalright Containers so we should be supplied to the supp

Order Thru Your Jobber-Write Us For Samples SEALRIGHT COMPANY, Inc., FULTON NEW YORK

PRIS (3.02

The Perfect Delivery Package

Ice Cream Manufacturers

Why cheat your scientific methods of manufacture by packing your ice cream in an unlined can?



Allen's One-Piece Sanitary Can Liners

Insure absolute protection to your Cream. They save you money in prolonging the life of your cans, and give your ice cream container the sanitary appearance that can be gained in no other way.

Samples and Prices upon Request.

Sold by your Supply Man,

or

Write Direct to

THE ALLEN CANDY CO., Sole Manufacturers, Pontiac, Ill.

SUGGESTION

is the keynote of the most successful methods of increasing the sale of Ice Cream.

Signs, Hangers and other advertising media all help suggest, but the most powerful suggestive force is an attractive carton.

Try this simple method of increas-ing the sale of your brick cream

- 1st Be sure your carton has an attractive, clean cut appearance that will stimulate the buying impulse.
- 2nd Furnish your retail dealers with a generous supply of empty cartons for window and soda fountain displays. The results will surprise you.

MENASHA PRINTING & CARTON CO.

MENASHA WISCONSIN







The Improved line of Menasha Pails are ready for you-a neater looking, more substantial and servicable pail is impossible to find.

As always Menasha Pails are made of solid manilla. Three styles from which to choose, including both wire and tape handles. Two quart, quart, pint and half pint sizes.

SPECIAL NOTICE

We are now equipped to furnish you with Menasha Pails made from white patent coated paper stock (same as used in cartons) with your own design printed in one, two or three colors. The advertising advantages of this type of pail are inestimable.

Write today for samples and prices

MENASHA PRINTING & CARTON CO.

NEW PORK, 200 Pitth Are. 205 ANGELES.





THE NEW MENASHA CAN LINER Costs less 40% less shipping weight Clean White Appearance Paraffined Both Sides



THE NEW MENASHA CAN LINER Exceptionally tough Will not soak up Will not peel from the dipper Thinness saves time in Hardening Room



Meyer Ice Cream Delivery Equipment Standardized Units Ouick Deliveries



Order NOW for Spring Delivery.

Meyer Wagon Works
216 Elm Street Buffalo, N. Y.



A PRODUCT OF 20 YEARS' STANDING
Anti-drip Economical, Long Life,
Adaptable
Meyer Anti-drip Wagons
Meyer Anti-drip Auto Bodies
Meyer New Type Refrigerator Bodies



PACKARD



Delivering Ice Cream at Less Than Four Cents per Gallon

One reason the Packard truck satisfies the hauling needs of the ice cream industry is its dependability. Ice cream is perishable, it is frequently made in large quantities, and it must be delivered in first grade condition just when the retailer wants it.

Into this requirement Packard trucks fit. They are ready when needed and they are swift and dependable. They deliver maximum utility at lowest cost.

The John T. Cunningham Ice Cream Company, of Chicago, uses Packard trucks. Each Packard covers a thirty-eight mile route daily, stopping from forty to sixty times, with an average delivery cost of but three and two-fifths cents for each gallon.

Packard trucks are designed and made in Packard shops by Packard men; they are scientifically specified to their jobs. They have ability to do their hauling tasks at lower costs per unit-mile.

PACKARD MOTOR CAR COMPANY · DETROIT

Ask the man who owns one

Digwed by Google



From the driver's standpoint, contrast the Walker's cool, silent, sure flow of power with the megaphoned noise, heat and vibration the gas truck driver endures hour after hour. Walker Truck drivers learn quicker, work better and do more.

Instant "pick-up," easily threading the closest traffic—a motor that stops when the truck stops—all the speed and power any city truck wants—enable Walkers to operate at lowest trucking cost. Write for our new catalog, which explains the twelve major economies of the Walker and shows why accountants place Walker depreciation at only 6% to 10% per year.

WALKER Electric TRUCKS LOWEST TRUCKING COST

WALKER VEHICLE COMPANY CHICAGO NEW YORK BOSTON PHILADEPHIA



AMERICA'S LARGEST MANUFAC-TURERS OF ELECTRIC TRUCKS & TRACTORS





GET READY FOR A BIG YEAR

Plan now for a delivery system satisfactory to your customers and to yourself—a system that is

Economical
Efficient
Electric and
Edison-Equipped

Electric trucks are proving their value every day. Electricity is cheap power. Ordinary drivers quickly learn to operate electrics. Edison Batteries furnish reliable power year after year.

The outstanding feature of Edison-equipped trucks is high "service efficiency"—the greatest number of days of service each year over a period of years, at minimum cost of operation.

Investigate electric trucks. They mean economy and satisfaction.

Bulletin 850BD on request.

Edison Storage Battery Co. Orange, N. J.

DISTRIBUTORS IN

New York Bost Atlanta Clev New Orleans Dets Philadelphia Pittsburgh Washington

St. Louis Kansas Cit San Francisco Scattle



ELECRIG

THREE TESTS

A large New York concern recently made three exhaustive tests of electric trucks.

Like many of the most progressive concerns of the country, they settled years ago upon electric trucks for city deliveries because they give better service at less cost.

But recently they found they needed more trucks, so they went into the market, not to be sold, but to buy.

They waved aside ordinary sales arguments and made three tests.

These tests showed that:

- 1. C-T trucks are able to cover 10% more mileage.
- Are four times as accessible for repairs and much simpler.
- Are 15% faster—than any other truck that they thought worthy of consideration after a preliminary investigation.

They bought twelve C-T trucks on the basis of their own tests.

These tests are simply the latest confirmation of what has long been known—that the C-T no-differential unit drive is far more efficient, gives far less trouble, and operates for less cost than any other type of construction.

Write for full details on the above and for further information about the service and economy of C-T trucks for your work.

Commercial Truck Company
Factory and General Offices
Philadelphia



Walker Electric Truck equipped with Exide-Ironclad Battery



For every day in the year — Electric Trucks

1921

The electric truck is the economical vehicle for a large proportion of all city hauling, every day in the year, according to the most reliable figures of

transportation costs.

A good proof lies in the fact that upwards of 70 or 80 percent of electric truck sales are on repeat orders. Users find that their operating cost is exceedingly low.

A good electric truck is at its best when it is equipped with the Exide-Ironclad Battery. It is the only battery made that has all the four essentials of storage-battery equipment for electric truck service-power ability, ruggedness, high efficiency, and long life.

The Exide-Ironclad Battery is unlike any other storage battery in the world; its design and construction embody the experience of thirty-three years by the largest manufacturer of storage batteries in the world.

Write for a list of truck manufacturers, and learn why it will pay you to use electric trucks every day in the

THE ELECTRIC STORAGE BATTERY CO.

Oldest and largest manufacturers in the world of Storage Batteries for every purpose

PHILADBLPHIA

Branches in seventeen cities

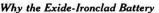
Exide Batteries of Canada, Limited, 133-157 Dufferin Street, Toronto







Electric Truck equipped Exide-Ironclad Battery



1-The Exide-Ironclad Battery in a truck is a guarantee of ample power; it supplies all the power the mechanism of the truck can utilize—power to climb stiff grades or pull out of holes easily and surely. 2-The Exide-Ironclad Battery maintains a good voltage

throughout a normal day's work; therefore the speed of the truck remains close to maximum all day long. 3—The Exide-Ironclad Battery cuts your operation costs on account of its extra high efficiency. The truck owner gets back in useful truck-moving work the maximum

gets back in useful truck-moving work the maximum possible percentage of the power he pays for in charging the battery.

If the power he pays for in charging the battery of design, in plates, separators and jurisms, make the Exide-Ironciad a battery of unusual strength. It has proved its ability to stand punishment in years of hard service under all sorts of operating conditions. Designed and built to give service, the Exide-Ironciad Battery is the result of 33 years of

battery-building experience.

The Exide-Ironclad Battery is different from any other storage battery made; it is the only storage battery that combines all the vital features of a good vehicle





"Couple Gear" Electric Truck equipped with Exide-Ironclad Battery

What Exide users write:

"If there were any other trucks or batteries that would do the work better or more economically we would have bought them; so far they have surpassed our expectations."

"We have used Electric trucks equipped with Exide-Ironclad Batteries for eight years, and each battery from three to four years. Our trucks average about 30 miles per day."

"Our service has not been interrupted in any manner whatsoever due to any trouble of the batteries."

"We believe the Ironclad to be the most efficient battery and covering all electric truck needs."

This booklet. Keep Them Moving. important business message to truck owners. Write for it today, and learn how you too can cut your haulage costs with elec-







Business Builders of the Nation

may be truly ascribed to the use of WARD ELECTRICS in the ice-cream business.

First: Because in any business where hauls are short and stops are frequent—the work can be more cheaply done with WARD ELECTRICS than with either horses or gas cars. Money is therefore saved and hence WARD ELECTRICS are truly BUSINESS BUILDERS OF THE NATION.

Second: WARD ELECTRICS are reliable; that is, they remain in service a high percentage of the time and thus reduce the cost of ice-cream transportation. Here again WARD ELECTRICS are conservers of money and again are entitled to the caption, BUSINESS BUILDERS OF THE NATION.

Third: WARD ELECTRICS use electric ty for fuel or power instead of food (for horses) or gasoline (for gas cars). Electricity is the cheapest form of power, and will soon be largely supplied from great water power plants all over our continent. Here again, WARD ELECTRICS are conservers of our national resources (food and fuel BUSINESS BUILDERS OF THE NATION.

Finally: WARD ELECTRICS are long in life and therefore depreciate slowly. This slow depreciation makes for a low annual cost and this conserves money—the nation's wealth.

Why not use WARD ELECTRICS because they will save for you and save for the nation?

WARD ELECTRICS are truly BUSINESS BUILDERS FOR THE NATION and BUSINESS BUILDERS FOR YOU!

Ward Motor Vehicle Company Mt. Vernon, N. Y.

Makers of Electric Trucks 750 to 10,000 Lbs. Capacity



The Mark of Merit

Vertical Condensed Milk Cooler



Twin Helical Coil rotates from bottom up, working air and gas out of product.

CANS, ONCE FILLED, STAY FILLED. Flavor Control Positive from Mechanical Standpoint.

PREVENTS SAND AND GRITTINESS. Elimination of Stuffing Boxes.

Further information from

Jensen Creamery Machinery Company

Builders of "Equipment of Practical Efficiency"

BLOOMFIELD, N. J.

OAKLAND, CALIF.

DUMORE

"It Does the Work"

Story of the DUMORE



LIFE TIME LAST A

Whole and skim milk are used to reduce a heavy cream to a lower percentage, but when bottled, there is a precipitate which is objectionable and undesirable. Pasteurization, it is well known, also affects the viscosity of cream.

It was thought that a high pressure pump would solve these problems and to this end, experiments were made. After a few changes, it was found that any process of mixing and smoothing out or recombining milk and its products could be accomplished; hence its name DUMORE. It has been doing satisfactory work for nearly four years, and two Ice Cream plants have been using it with excellent results making the mix perfectly smooth and aiding the yield without incorporating air. It is not an invention, there are no patents nor any claims made for such. It is purely a common sense idea put into practical use by a man in the business. It has been proven a success and in the province of the provent a success and in the province of Indianapolis, Indiana

SAFETY FIRST

Can not strain or damage the DUMORE with excess pressure; can run empty without damage or danger to pump or person; no mechanical troubles, no operator required. SIMPLE AND SAFE.

PRICE

2000 to 4000 pounds \$1,000.00 4000 to 6000 pounds \$1,250.00

TWO PRINCIPLES

DUMORE Steam Power POSITIVE Belt Slippage Small Hole Discharge FULL SIZE OPENING VS. Shattering Squeezing VS. Compression ve. Combustion Expanding Explosion

Distributor

ELYRIA ENAMELED PRODUCTS CO., ELYRIA, OHIO

> THE NATIONAL STEAM PUMP CO. (not INC.) Upper Sandusky, Ohio

"Hot weather demand never has us worrying with the De Laval Emulsor"

That's the feature of the De Laval Emulsor which appeals most strongly to the El Reno Ice Cream Company, of El Reno, Okla. They can devote the busy summer months entirely to making and selling ice cream, with never a moment's worry regarding their cream supply. Here's what they say of the De Laval they have installed:

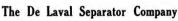
Since 1914 we have been using a De Laval Emulsor with perfect satisfaction. The extra demand for ice cream in the hot summer weather never has us worrying, for with the Emulsor we have cream at all times and in any quantity we need.

The only expense of operating the De Laval Emulsor is the regular labor and oil, the machine being very simple to care for.

You can solve your next summer's cream problem in the same way. With a De Laval to emulsify stored butter, skim-milk powder and water you have an unlimited supply of sweet, normal cream always available. De Laval emulsified cream

whips and swells perfectly and can be made up with any desired butter-fat content.

> "What Users Say of the De Laval Emulsor" is the title of an interesting booklet which expresses the views of many leading ice cream makers who use the De Laval Emulsor. Your copy is waiting. Also write for latest Emulsor Catalor.



New York Chicago San Francisco Montreal Peterboro Winnipeg Edmonton Vancouver



Sooner or later you will use a De Laval

PUMPS

DO YOU NEED ANY HELP IN SELECTING, INSTALLING OR OPERATING ANY KIND OF PUMPING EQUIPMENT IN YOUR PLANT?

WE OR ANY VISCOLIZER AGENT CAN HELP YOU

IF WE CAN'T FURNISH WHAT YOU NEED, WE CAN TELL YOU WHO CAN



FOUNDRY AND FACTORY

ASK FOR BULLETIN No. 57

PUMPS FOR ANY PLACE IN AN ICE CREAM PLANT

UNION STEAM PUMP COMPANY

BATTLE CREEK, MICHIGAN



Installation at the Moores & Ross Co., Columbus, Ohio

"The Fellow next Door"

The PFAUDLERCO.

The World's Largest Makers of Glass Lined Steel Equipment

ROCHESTER, NEW YORK
NEW YORK CHICAGO ST. LOUIS SAN FRANCISCO
FOREIGN AGENCIES:
Enamelled Metal Products Corporation, Ltd., Imperial Bidgs.,

Enamelled Metal Products Corporation, Ltd., Imperial Bidgo., 56 Kingsway, London, England
Mauri Bros. & Thompson, 123-131 Castlereagh Sc., Sydney, Australia

WHEN "the fellow next door" is beginning to replace his old equipment with new, you will have the satisfaction of knowing that your Pfaudler Tanks will still give you many more years of service. We do not maintain that it is impossible to wear them out, but we do wish to point out that after more than 35 years of wear a conspicuous number are still as good as new—

To be thus equipped, obviously gives you an advantage over "the fellow next door"







The quality of Elyria Enamel and the mechanical excellence of equipment is proven by the fact that a majority of the larger dairy plants use it.

The company also provides exceptionally complete service. Sales engineers located convenient to everywhere are prepared to demonstrate, in your own plant with actual apparatus, what can be saved in labor, space and time, thereby eliminating prolonged or intricate technical correspondence.

For solving unusual problems, the Elyria Company has in its employ Dairying Experts who can instantly be brought into consultation. And for final assurance, the home plant maintains one of the most complete research laboratories in the country.

A letter or wire to any Elyria office will bring a representative at once.

Elyria was first to specialize in Glossenamel for all Dairy processes.

The Elyria Enameled Products Company

NEW YORK

CHICAGO Conway Bldg. PITTSBURGH Oliver Bldg.

SAN FRANCISCO 16 California St. LOS ANGELES San Fernando Bidg.

Canadian Representatives

CANADIAN MILK PRODUCTS, LIMITED Toronto, Ont.

Winnipe

St. John

Montreal

Vancouver



CHAMPION ICE BREAKERS

Champion No. 11 shown here has a capacity of 40 to 60 tons of broken (not crushed) ice per hour and can be set on the floor or lung from the ceiling and is designed for the cream factory.

Motor driven, either belt or chain drive. The motor is protected by an extra heavy reinforced iron hood. The teeth are diamond pointed and



use drives teeth more firmly into sockets. They are easily removed for sharpening. All gears enclosed in heavy castion guard. It is back geared with ring oiler bearings, all main bearings being interchangeable. All nuts and bolts of Tobin bronze and rust proof.

Other sizes to meet the needs of any plant.



Write for descriptive catalogue and prices now.

THE ALLMAN GAS ENGINE & MACHINE CO-

Office: 461 Canal St., New York, N.Y. Factory: Arlington, N. J.

The Improved Little Giant

Can Washer

Washes Cans Clean and at Lightning Speed

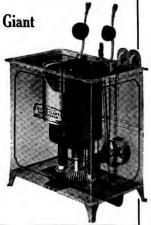
That's the reason the largest plants are using it. All sizes of cans, from 4 to 40 qt., are thoroughly cleaned both inside and outside without change of brushes. Washes cans better than machines costing many times more. Furnished either with belt drive or with direct connected motor.

Catalog for the asking.

C. Doering & Son, Inc.

Lake and Sheldon Sts.

Chicago





The Ruff Condensing Evaporator

FIVE SOUND REASONS WHY THE SAME SHOULD BE IN EVERY ICE CREAM PLANT VERSUS OF BUY-ING THE WHOLE MIX, OR CONDENSED.

- If the other fellow makes the mix for you, you can never depend on a regular supply when you need it and you take a chance of being short when the rush is on.
- You have no way of knowing how old the mix is because sugar and neutralizer will preserve it, and your competitor who has the freshest and most wholesome mix may get your best customer, who balks on inferiority.
- The mix will cost you from 10 cents to 25 cents per gallon more than if made fresh in your own building.
- You have sold your independence and volunteer to slave for the other fellow's pocket book.
- There is no method or process of condensing that will make as good a quality of ice cream mix as can be made with the Ruff Condensing Evaporator.

Ask our satisfied customers. Your correspondence is solicited.

THE CREAM PRODUCTION COMPANY Port Huron, Michigan

B. TRUDEL & COMPANY, Montreal, Manufacturer and Jobber for Canada.

ANY SUPPLY HOUSE CAN SELL YOU A CREASEY



■▼ Don't let any one persuade you to take a substitute but get the machine that outsells all others combined. If you have any trouble at all in getting a CREASEY just let us know,

The CREASEY Ice Breaker is made in our own shops under personal supervision. Most "manufacturers" have to depend on some one else. They have to take what they get or submit to considerable delay.

> While the CREASEY is made so well that few repairs are ever required.

you can always get duplicate parts of an old model. This is another point to remember. We occasionally furnish new parts for machines sold twenty years ago.

Although the CREASEY has been on the market for a long time, don't get the idea that it is old-fashioned. We are always on the lookout for improvements. The latest machines for instance have forged steel picks which are easily removable for sharpening or renewing and as easily replaced. They are also provided with adjustable combs for regulating the size of broken ice, babbitted bearings, delivery of ice interchangeable front or rear, etc.

Write for our Catalog 909T to-day-Summer will soon be here

JOS. S. LOVERING WHARTON

Manufacturer 3123 N. 17th Street, 1

PHILADELPHIA, PA.

							the name of
you agents	in this	neighborh	ood. We	break at	out	 lbs per.	
Address		_				 ibs per.	

Milk Condensing Machinery



IN ALL CAPACITIES

Our machinery will make all the different kinds of condensed milk that is manufactured. Also condenses buttermilk, milk for drying, also for chocolate manufacturers, etc. Write us.

Small Capacitly High Type acuum Pan and Patented Condenser

R. R. Rogers Co. 3328 Chope Place Detroit, Mich.

ESTABLISHED 1884

Copper Condensing Pans FOR ALL CLASSES OF MILK



Large amount of heating surface which is very low in the pan. Large steam inlets and outlets for utilizing exhaust steam.

Get our Blueprints with Specifications and Prices.

GROEN MFG. CO., Inc. 4529-37 Armitage Ave. Chicago, U.S. A.

Crushed Ice and Salt Elevators



Ice Cream Manufacturers Tongs, Used for Lifting Ice Cream Cans out of Tubs. Increased 100%

CRISHED ICE ELEVATOR Graham Ice Cream Co. Omaha, Neb.

You can handle your blocks of ice, crushed ice and salt quicker and at far less cost with G-W equipment.

We are specialists in designing elevating and conveying machinery and our Engineers are experts in solving handling problems. Let us suggest an equipment for your needs and quote prices for your considerationno obligation incurred.

WE MANUFACTURE

e Elevators and Conveyors, Ice oists, Ice Crushers, Crushed Ice onveying Machinery for all purposes, ouders, Buckets, Chain, Chutes, etc.

WORKS: HUDSON, N. Y.

Huffalo





Out of a dozen men who are asked to guess the temperature of anything, not one will be able to give it accurately. Yet, some of the largest manufacturing plants -in which heat-treat process forms an im-

Put your heat-treat process on the same scientific basis as your other processes. esses, by using

Columbia Recording **Thermometers**

You will then know exactly what your temperature conditions are every minute, day and night. They give an absolutely accurate record of the slightest temperature variation—an indelible inscription on a renewable chart, which places in your hands valuable information that enables you to secure perfect temperature control.

Failure to maintain a stipulated temperature, through carelessness or ignorance, can be instantly checked by the use of this sensitive but rugged instrument.

Scientifically constructed and rigidly in-spected, Columbia Recording Thermometers are guaranteed to be accurate and infallible. For all temperatures up to 1000° F.

Shall we send you our catalog 11-16?

Schaeffer & Budenberg



Makers of Cauges and Thermom-eters for all requirements Operation Recorders, Calorimeters

Berry and South Fifth S1s., Brooklyn. N. Y.

Chicago Washington Philadelphis San Francisco Pittsburgh Los Angeles

TEMPERATURE INSTRUMENTS

Most ice cream manufacturers prefer Tycos Straight Stem Thermometers for use on Brine Ice Cream Freezers.

THE REASONS:

- f Substantial thermometer care 7 Tube and scale protected from mechanical injury.
 - Easy to read at a considerable distance or in a dark place. 4. Insulated preventing frosting over of the scale,
- 5. Wrench head of substantial proportions to withstand wrenching strains.

7" scale, range minus 20" to 120", threaded for ";" pipe or a %" pipe as may be specified, stem 1%" long including thread.

Complete information on this and other Twos Temperature In-strumenta, Indicating, Recording and Controlling, on request.

Taylor Instrument Companies ROCHESTER, N. V.

There's a few or Temperature Instrument 736 for Every Purpose



You Can Make the Very Best Ice Cream in this Progress Freezer at Low Cost.

Mail the Coupon Today for Information and Low Prices

... COUPON I C T J DAYIS WATKINS DAIRYMEN'S MFG. CO., 130 North Wells St., Chicago, III. BIRANCHES—Jersey City, N. J.; North Chicago, III.; Kannan City, Mo; Denver, Colo.; San Francisco,

Send Progress Vertical Preezer Prices.

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Address															
City											١	٠			

BRANCHES. New York, 50 Church St. Chicago, stminster Bldg. Boston, 268 State St.

CORK INSULATION

UNITED CORK COMPANIES Manufacturers and Erectors

Let us solve your problems

SALES AGENTS.

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F. M. WOODFORD ENGINEER AND ARCHITECT

Plans, specifications and supervision of buildings and equipment for ice cream and dairy plants. Tests and examinations of existing plants.

Preliminary estimates and information free and without obligation.

90 West Street, New York City



Condensed Milk Machinery

THE BETTER KIND

We teach you to make condensed milk

C. E. ROGERS Builders of better Condensing 8731 Witt Street Detroit, Mich.

WILLIAM H. TIMM

Consulting Engineer and Architect

726-728 Perry Bldg., Chestnut and Sixteenth Streets, Philadelphia, Pa.

SPECIALIST FOR DAIRY AND ICE CREAM BUILDINGS AND EQUIPMENTS CONSULTING SERVICE BASED ON EXPERIENCE PLANS, SPECIFICATIONS AND INSPECTION WORK



You are NOT prepared to handle your Summer Trade until you have installed a

VILTER Refrigerating Machine

THE VILTER MFG. CO.

888 Clinton Street

Milwaukee, Wis.

A GUARANTEE OF ECONOMY IN PLANT BUILDING AND OPERATION



Preexing Room of the Washington Plant. Chaple-Sacks

You Can Save Time and Money by Having Your Preliminary Work Done Now

McCormick Service WHEN you get ready for that new

WHEN you get ready tor that new plant or alteration you have in mind as soon as prices settle, you, like everybody else, will want the work in a hurry. After you once decide to go ahead every hour will count and every delay will mean an operating loss to you.

It doesn't cost any more to get your plans and preliminary drawings made now than it will a few months later. In fact, you will be making a substantial saving in time and money.

McCORMICK SERVICE operates to your advantage in every way, not only by assisting you in working out an efficient, ideal ice cream plant to meet the needs of your particular location and business, but it relieves you of the mass of detail in connection with any construction job. It secures for you the lowest prices on materials in the competitive market, it insures you against wastes and blunders on the part of contractors, and most important of all, McCORMICK SERVICE is a positive guarantee that your plant will be exactly as you want it and that you will get maximum production at minimum cost.

McCORMICK SERVICE is based on sound engineering practice, made practical and economical through the application of specialized experience of the ice cream industry and a technical knowledge of its mechanical problems.

If you are considering alterations or a new plant, don't wait longer to make your plant and get your preliminary work ready to go ahead when you think the time is right. Foresight is an important factor now. We will be glad to discuss your proposition with you fully without obligation on justerated. Just werke us you are vieterated.

The McCormick Company, Inc.

PITTSBURGH Century Bldg. Architects and Plant Efficiency Engineers for the Ice Cream Industry

NEW YOKK

Construction Executed by Your Local Contractor Under Direction of Our Visiting Superintendents

A Test We Didn't Make

AYBE you are one of those who tare a little skeptical about manufacturers' tests on insulating material. All right—here is one there can be no question about. Not even the customer made it. It was made for him, and the making of it destroyed his whole plant except the hardening room. But read this letter from the Amboy (Ind.) Creamery Company, dated January 12, 1921:

CREAMERY BURNS Entire Factory Destroyed by Fire Early Tuesday Morning Mari move to -Origin Unknown new branch The Amboy butter, cheese and ice The facto cream factory was totally destroyed the Amboy E by fire early Tuesday morning. The pany, a corpo factory was located in the north part ganized many of town, and the fire was first disness was owne covered by trainmen on a C. & O. Amboy Creame train. The engineer blew the whistle pany which was as his tram passed through town, and Charley Arnold years ago, the ; the noise awakened persons in the stockholder in vicinity of the creamery who soon overed the cause of the alarm and ment has bee to the fire. The blaze was from \$25,000 The loss of f

"On the morning of December 21 our entire plant was consumed by fire. Our refrigerating room was inside of the creamery. After the fire the anteroom was all burned down, and the hardening room, which was built of two layers of three-inch corkboard, went through the fire without being burned very badly. The outside of the room, which was covered with lumber, was all burnt off and just the cork was left.

"Ten hours after the fire, when we opened the door, the temperature of the room was 10 degrees below freezing. We expected to find the room very hot and that the ice cream would be ruined. The 150 gallons of ice cream was in fine condition; we could not tell it had been through a fire.

"We feel that the cork must have been all you said it was or it would not have stood the test it did."

A very satisfying test. Nonpareil Corkboard certainly does keep out the heat.

Why Nonparell Corkboard insulates so well and lasts so well and what that means to you is explained along with other information of great value to users of refrigeration in the 162-page book. "Nonparell Corkboard Insulation." There is no charge for it. A copy of the book and a sample will be turnished prompily if you will send in your

Armstrong Cork & Insulation Company, 109 Twenty-fourth Street, Pittsburgh, Pa.

Also munificturers et. Nonperell Cerk Covering for brine and ammonia lines, coolers, banks and cald unified or provided provided the coolers of the coolers

Nonpareil Corkboard Insulation

=For Ice Cream Hardening Rooms=



Make Preparation Now

for next season's Ice Cream trade. Do you want to operate Economically? You certainly do. Then, use the exhaust steam, to produce refrigeration, which now goes to waste in your plant. The use of exhaust steam, the elimination of rapid running parts, highly efficient economical service are the three principle selling points of

Vogt

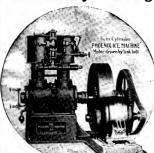
Refrigerating Equipment for Ice Cream Production

Let us send you a

HENRY VOGT MACHINE COMPANY, Louisville, Kentucky

Manufacturers of Ice and Refrigerating Machinery, Drop Forged Steel Valves and Fittings, Water Tube and Horizontal Return Tubular Boilers, Oil Refinery Equipment.

Economy-Long Life-Service



THE three are inseparable when Phoenix Compressors are used.

Phoenix unfailingly produces many tons of unexcelled refrigeration at lowest possible cost. The experience of users over 25 years is proof of this. Send today for the Phoenix catalog—a non-technical text-book on refrigeration—and let us show you what Phoenix will do for you.

PHOENIX

THE PHOENIX ICE MACHINE COMPANY
2708 Church Avenue Cleveland, Ohio



"Ice Famine"

Reports from all over the country are the same. "No ice cut yet - waiting for thicker ice." This will result next summer in ice not only being scarce, but in it being high in price. In many cases what little is on hand will be commandeered for private houses, and public institutions.

If you have your own refrigerating system-particularly if you own a CP Refrigerating System-you are lucky. But if you don't now own one, you'll save yourself a lot of trouble and expense if you place your order at once.

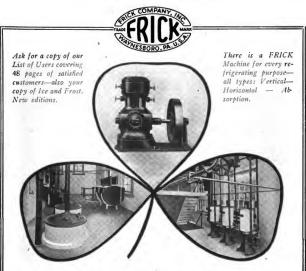
CP Refrigerating Systems are built either vertical or horizontal in all sizes from 34 ton up. They are conservatively rated, decidedly reasonable in price and will give lasting service under severe working conditions.

A Distinctive Feature

All CP Vertical Refrigerating Machines made with separate cylinders can be furnished with two-suction connections for producing refrigeration with increased efficiency when varying temperatures are required for different cooling rooms. Other makers must supply two machines for supplying sufficient refrigeration in such cases.

Although never so busy in our lives before, we can still install a few more new jobs before warm weather sets in, if the orders come in at once.

THE CREAMERY PACKAGE MFG. COMPANY



Frick Mechanical Refrigeration

installed in an Ice Cream Plant is a source for continued GOOD LUCK. The Frick System is very efficient, durable and economical, the equipment being of first class mechanical construction. Let us tell you more about it.

Write our nearest branch,



New York, N. Y

BRANCHES: Baltimore, Md. Pittsburgh, Pa.

Atlanta, Ga.

Chicago, Iii. Detroit, Mich. Denver, Colo. Memphis, Tenn. New Haven, Conn. Baltimore, Md. New Orleans, La. San Antonio, Texi Los Angeles, Calif.

NORWALK REFRIGERATING PLANT



walk Four-Cylinder, Four-Ton, Ammonia Compressor,

Are You Looking for Higher Refrigerating Efficiency?

By combining uniform reliability, economy in operation and high volumetric efficiency the Norwalk Refrigerating Plant provides a service for ice cream factories and makers of confectionery which is distinctly out of the ordinary.

It insures the desired refrigeration at all times without tinkering or adjustments, possesses the ruggedness to withstand the severest continuous usage and may be depended upon for troubleproof performance. It has no internal bolts or nuts; nothing to work loose. Its operating parts are few and strong.

The Norwalk, which is of the ammonia compressor type, has behind it The Norwalk Company's successful experience of nearly half a century in the manufacture of air and gas compressors for all uses. It was not marketed until it measured up to Norwalk standards of quality and reliability throughout.

Capacities, one quarter ton to 25 tons. Adapted to the requirements of any factory. The fullest co-operation of our engineers is at your disposal in connection with special refrigerating problems.

If you are building a new factory or looking for higher refrigeration efficiency in your present one, write for our Refrigeration Bulletin

THE NORWALK IRON WORKS COMPANY Pioneer Builders of Compressors SOUTH NORWALK CONN.



A
SANITARY, ECONOMICAL and RELIABLE
ADJUNCT TO THE

ICE CREAM BUSINESS

Lowers cost of production-Increases output



QUAL ITY



SERVICE

YORK MANUFACTURING CO.

Ice Making and Refrigerating Machinery Exclusively

YORK, PA.

Sharpless-'Hendler Ice Cream Company's Plant at Wilmington, Delaware



DESIGNED AND INSTALLED

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K. W. SCHANTZ, Inc.

Engineers and Contractors

78 Main Street

Buffalo, N. Y.



WE DESIGN AND INSTALL COMPLETE ICE CREAM AND DAIRY PLANTS

DIVIDENDS



Will largely depend upon your wise choice of a

REFRIGERATING PLANT.

Eliminate troubles by purchasing

The Simplified Arctic

A Plant That Has Always Made Good

Both Horizontal and Vertical Types
In sizes from 1 to 1000 tons capacity
We specialize in Ice Cream and Dairy
Plants

Send for information blank, if you desire quotations

THE ARCTIC ICE MACHINE CO., Canton, Ohio



CONTINENTAL

Direct Expansion Ice Cream Freezer

SAVES TIME

You can start freezing ice cream at the same time you start compressor. No Delays.

Isn't this a big item?

Freezer has right temperature at all times if compressor is running.

No wait for brine to cool.

You can freeze a batch in jig time.

We also manufacture a full line of refrigerating machinery.

CONTINENTAL MACHINERY COMPANY

General Office

111 W. Monroe St., Chicago, Ill.

Factory
Fort Madison, Iowa

The Miller Pasteurizing Machine Company, in order fully to protect the rights acquired by it in the property and business, including the good will of the business, of The Tyson Company, recently joined, as plaintiff, in a suit in the Court of Common Pleas in Stark County, Ohio, against The Tyson Company, The Advance Dairy Machinery Company, and Frank Tyson, among others, as defendants. Upon the issues joined the Court has found in favor of the plaintiff and against The Tyson Company, The Advance Dairy Machinery Company, and Frank Tyson among other defendants.

As a result of the decree in our favor, the defendants, The Tyson Company, The Advance Dairy Machinery Company and Frank Tyson are now enjoined, among other things, from manufacturing or causing to be manufactured, any ice cream freezers covered by Letters Patent of the United States owned by The Tyson Company at the time of the sale; from filling or supplying any order for repairs and parts for such Tyson ice cream freezers; and from doing any act or thing which will directly or indirectly interfere to any extent with our exclusive enjoyment of the right, license and privilege to make, use and sell all devices covered by the claims of such Letters Patent.

They are also now enjoined from doing any act or thing which will directly or indirectly interfere to any extent with our exclusive enjoyment of the business or good will of the business owned by The Tyson Company or Frank Tyson, jointly or severally, at the time of the making of the agreements of sale; and from affirmatively doing any thing to cause the public or trade to believe that The Advance Dairy Machinery Company is the successor in business to The Tyson Company.

The Miller Pasteurizing Machine Company alone is licensed to make Tyson freezers. It is now in possession of the manufacturing equipment, stock of material, etc., necessary to enable it to continue the Tyson line. We are manufacturing, intend to continue manufacturing and are prepared promptly to furnish Tyson freezers and parts and supplies therefor, maintaining the established standard and quality of product.

We also are alone authorized to fill orders for parts, repairs and supplies for Tyson freezers and are prepared to do so promptly and at reasonable prices.

H. H. Miller Industries Company

THE MILLER PASTEURIZING MACHINE COMPANY

Canton, Ohio

H. H. Miller Industries Company Canton, Ohio

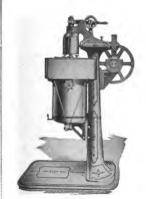
Successors to
THE MILLER PASTEURIZING MACHINE CO.
Send for Catalogue and Prices



THE MILLER HORIZONTAL
Pyramid Type



TYSON MODEL "C"
With Fruit Hopper
Patents Nos. 42,791, 43,277, 999,473 and
1,001,906. Other Patents Pending



PATENTED
THE MILLER-HOEFLER
Double Beater



PATENTED
MILLER ANVIL BASE PATTERN
40-Quart-Motor Drive

The *CP* Hydraulic Ice Cream Can Washer Is a Remarkable Labor Saver



I T will not only wash, rinse, and sterilize from 300 to 500 Ice Cream Packing Cans and Covers, Brick Molds, Carry-out Pails, etc., per hour, which is much more rapid than is possible with ordinary methods—but it washes and sterilizes them much more efficiently.

The **CP** Hydraulic Ice Cream Can Washer soon pays for itself as a result of the handsome saving in labor it effects. An ordinary investment will yield 6%. An investment in the Hydraulic Washer will yield several hundred per cent.

But the money saved by a reduction in labor costs is only one of several reasons why such concerns as Bendfelt of Milwaukee, Telling-Belle-Vernon of Cleveland, Breyer of Philadelphia, Ives of Minneapolis and many, many others have found this machine indispensable.

As the machine delivers the cans thoroughly clean and sterile and piping hot they are perfectly dry and dry cans do not rust. As the cans are washed and sterilized with water under tremendous pressure there are no brushes to bother with. And, last, but not least, the workmen like to work with the machine and it makes the entire force more contented and steady.

Please write for folder, describing this machine in detail.

The Creamery Package Mfg. Company

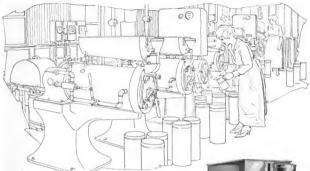
Milk and Cream Handling Machinery Cheese Making Machinery SALES BRANCHES— Shieago, 61-67 W. Kinzie St. Suffalo, N. Y., 133-137 E. Swan St. Kansas Cily, 1408-10 W. 12th St. Sinneapolis, 318-320 Third St. N.

Philadelphia, 1907 Market St. Portland, Ore., 6-8 N. Front St. San Francisco, 699 Battery St. Toledo, 119 St. Clair St. Waterloo, 406-8 Sycamore St. Ice Cream Making Machinery tefrigerating Systems Dairy Machinery



The Buyer's Page





U. S. Brine Freezer

The U. S. Brine Freezer is the culminating result of years of experience in design and manufacture of Brine Freezers.

Experience has shown the need of heavy design throughout, with ample bearings, large gears and adequate lubrication.

We submit the U. S. Brine Freezer as the best example of Heavy Duty Freezer Construction yet offered the trade.

Belt Driven Machines can be easily converted to motor driven machines, in your own factory if you desire there there is not not not a superior of the property of the property of the property of the chain drive made by means of the lock muts fitted to the supporting rods under the motor table.

Removal and replacement of cover, and of the double dasher, exemplifies the thought that has been placed by the designer on ease of operation.

Note the knurled nuts on the cover that serve as handles and are so fastened to the cover that they can never be mislaid. Also notice the tripod which holds the dasher firmly, overcomes wear and prevents buckling caused by thrust of dasher.

By all means investigate this freezer. Orders are now being booked in large number for immediate delivery.

Prices and catalog on application.





A.H.Barber Creamery Supply Co. 310 W.Austin Ave., Chicago, U.S.A.



The K-W Trademark Stamped On Milk and Ice Cream Cans means

QUALITY—the best that can be produced SERVICE—quick shipments followed through to destination

If you are not familiar with K-W quality and service. a trial will convince you that quality and service are not merely advertising.

We are still maintaining our policy of not accepting orders unless we are sure of filling them,



Keiner-Williams Stamping Co.

8746-82 123rd (Vine) Street Richmond Hill, N. Y.

THE ICE CREAM TRADE JOURNAL

Vol. XVII

No. 4

A PRACTICAL HELPER FOR ICE CREAM MANUFACTURERS AND A CHRONICLE OF TRADE EVENTS



Official Organ of The National Association of Ice Cream Manufacturers.

Association of fce Cream Supply Men. Ass'n of Ice Cream M'f'rs of New York State. ssociation of Ice Cream M'f'rs of Pennsylvania. Ohio Association of Ice Cream Manufacturers. Indiana Association of Ice Cream Manufacturers. Association of fce Cream M'f'rs of Maryland. England Association of Ice Cream Manufacturers. The Missouri Association of Ice Cream Manufacturers. The Ice Cream M'f'rs' Ass'n of West Virginia, Virginia Ice Cream Manufacturers' Association. Arkansas Association of Ice Cream Manufacturer. Minneante Association of Ice Creem Manufacturers Illinois Association of Ice Cream Manufacturers. North Carolina Ica Cream Manufacturers' Association Canadian Association of Ice Cream Manufacturers



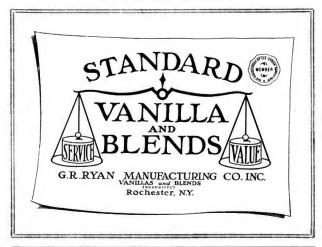
APRIL, 1921

UBLISHED MONTHLY THOMAS D. CUTLER 171 MADISON AVE. NEW YORK

TWO DOLLARS A YEAR



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For COFFEE ICE CREAM

Use

THE OLD RELIABLE

Arabian Coffee

Flavor

It has stood the test for many years

D. ABELSEN & SON, PROVIDENCE, R. I.

Successors to ABELSEN & SCOTT

HUDSON'S FAMOUS

Ice Cream Flavor

Vanilla and Tonka Blend No. 52 Special

Finest Flavor Made

WE WISH TO CALL YOUR PARTICULAR ATTENTION TO OUR HUDSON'S ICE CREAM FLAVOR VANILLA AND TONKA BLEND NO. 52 SPECIAL (all Vanilla with a small per cent Tonka), a piece of goods which is especially adapted where Ice Cream is made for commercial purposes and shipping. The Flavor positively will not freeze out. Where Condensed Milk, Homogenized Cream or Pasteurized Milk is used it takes a very strong flavor to get satisfactory results and overcome the condensed or powdered milk taste, and Hudson's Ice Cream Flavor Vanilla and Tonka Blend No. 52 Special is especially adapted for this purpose. The small percentage of Tonka blended with the all Vanilla causes the extract to retain its fruity flavor when exposed to freezing.

TONKA BEANS ARE VEGETABLE JUST THE SAME AS VANILLA BEANS, and just as pure and wholesome, and, best of all, Vanilla and Tonka will give the desired results at half the expense.

Put up in 10-gallon kegs, half barrels and barrels only.

10-GALLON KEGS	 \$5.50	Per	Gallon
HALF-BARRELS	 5.25	Per	Gallon
DADDETC	E 00	D	Gallen

Unequalled for the Ice Cream Manufacturer. One and one-half ounces give a mild, rich flavor, and two ounces a high flavor to what will make a 10-gallon batch of Ice Cream.

Let us send you a sample package, freight prepaid, to your city. You may return same at our expense if not entirely satisfactory.

Ice Cream makers who are looking for profit and reputation are using our Hudson's Ice Cream Flavor Vanilla & Tonka Blend No. 52 Special only.

The Hudson Manufacturing Company



(INCORPORATED)

Gabe S. Wegener, President

ESTABLISHED 1888

Vanilla Products

119-121 North Union Ave., CHICAGO, U. S. A.

Branches:--Vern Cruz, Mexico

Windsor, Canada

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For Perfect Maple Flavor

USE

Mapleine

-will not freeze out:

—the flavor holds true in the frozen cream no matter how long it is stored—a perfect maple;

-highly concentrated.

Give Mapleine a trial, Mr. Ice Cream Maker, before placing your season's order.

Prove to yourself Mapleine builds up maple sales.

\$3 brings a quart bottle for trial.



Crescent Manufacturing Company

New York Office: 105 Hudson Street

SEATTLE, WASH.

CUSTARD FLAVOR

For Ice Cream

Ninety-two per cent of trial orders mailed throughout the country has brought in substantial stock orders.

The rich color of the Egg combined with the delicate and precise flavor of MOTHER'S Custard pies is reproduced in making a delicious Custard Ice Cream of quality distinction.

Working sample for a 40 qt. stand—36c or $1\frac{y}{2}$ c to flavor and color one gallon of cream when purchased in 5-gal. lots.

Acme Bisque, Shelbark or Walnut Flavor, Working Sample for a 40-quart Freeze, 60c

Concretes of all flavors

Non-alcoholic Extracts

Acme Extract & Chemical Works
Branch: Toronto, Canada Hanover, Pa.

The Led of Google

LOWNEY'S

Bulk Cocoa

(in Barrels)

Liquor Chocolate

for Ice Cream Manufacturers, Bakers, Lunch Rooms, Restaurants, etc.

Cocoa Powder Cocoa Butter

The Walter M. Lowney Co. BOSTON, MASS.

FLAVOR

with NATURAL VANILLA

at 110 cents per finished gallon

RESULTS are positive with

Vanilla Isolate

a Concentrate made from high class Vanilla Beans only. And—its construction is such that it Freezes In.

You are protected by our unconditional guarantee of satisfaction.

Write Us Now.

FOOTE & JENKS

Expert Flavor Specialists

JACKSON : : : : MICHIGAN

The Cincinnati

Extract Works

Bigger business every season—more and better satisfied customers all the time, including the leading ice cream factories of the United States. Why? Read the reasons!

→1. →2.

Fruits are solid packed, therefore less required for each batch,

3. Frui

KEEPING QUALITIES guaranteed to last drop. Fruits COLD PROCESS therefore retain their natural flavors.

Prompt service for each order—no matter how large or small,

We're above competition on quality and below on price. Prove it to your own satisfaction by getting quotations on these highgrade Reyam Brand specialties:

Whole-and-broken or Crushed Cherries Red White Green

Crushed Pineapple-sweetened or unsweetened

Orange flavored Crushed Pineapple Tutti-Frutti-the quality kind Cold Process Strawberry

Crushed Peach Crushed Apricot

Chopped Walnuts in rich Maple Flavor

Mr. Ice Cream Manufacturer!

If you're from Pennsylvania, note that all of foregoing goods comply strictly with your state pure food laws, as well as all federal and state requirements.

Interested in Tempting Jobbing Proposition?

Then write us for facts, in connection with the distribution of our Crushed Fruits, Concentrated Syrups and Marshmallow Topping—put up in gallon and half-gallon containers.

Our Prices Always Interest

It's unwise to pay less, for you get lowered quality. And it's unnecessary to pay more. So why not line up with Reyam, like all the leaders of our industry? Concentrate on one brand of merchandise! Go with us and you'll grow with us!

The Cincinnati Extract Works

Canadian Office and Representative Walter S. Bayley, 20 Front St., E, Toronto. Can.

For Over 20 Years

We have *specialized* on Vanilla Extracts and Vanilla Compounds

We are *entering contracts* for this Season!

Proprietors of "VANOLEUM". The Original concentrated vanilla flavor. We warn the trade against worthless imitations having similar sounding names claiming to be "the same as Vanoleum"

Corrizo Extract Company

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New York, N. Y.



Scott's Coffee Flavor

101 Vanilla

REALIZING that the only sure foundation for a permanent business is merit in the products offered and delivered, I am devoting my best efforts and matured experience to the production of flavoring specialties to be sold strictly on their merits—flavoring specialties which are exactly as represented and which must satisfy the buyer before the sale is complete.

B. B. SCOTT 24-26 Ormsbee Avenue, Providence, R. I.



PROVE FOR YOURSELF

THAT

COMFORT'S

Mexican Vanilla Bean and Vanillin

(DRY FORM)

IS THE

PERFECT PRODUCT

Write for working sample, stating whether you wish it with or without seeds showing.

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Aschenbach & Miller. Inc. 400 North Third Street Philadelphia, Pa.

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featuring ENGAGEMENT PARTIES and WEDDINGS

LEAVES, W/STEM-LACE PAPERS FANCY PAPER CASES ICE CREAM MOULDS (Imported and Domestic)

IMPORTED PRUITS, PULPS, JUICES,

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The Third Edition of my book is just out, enlarged and improved, explaining in pain words and ingred and improved, explaining in pain words and arciting and pasteurising the mix to get best results with cream or remade cream. The making dings, famey less and forms, lee cream specials, its cream provider, liberty mix for quality and economy; in fact, everything that a first-dam ice oream maker in fact, everything that a first-dam ice oream maker of the country of the cream provider. It is not considered that the cream provider is not considered to the country of the coun most

HERMAN GRATZ

Practical Ice Cream maker since 1872 2441 South 20th St. Philadelphia, Pa.



MANUFACTURED BY THE TISCO COMPANY

WM. M. BELL, President CHICAGO, U. S. A.

Original Manufacturers of VANISCO, MAPLEISCO, RO-MAN PUNCH, VAN-ELL FLAVORS, FRUIT CONCEN-TRATES, MASS FLAVORS, EMULSIONS, TISCO PURE FOOD COLCERS.

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The King of Ice Cream Vanilla Flavors

Made Mexican Beans Fortified WILL NOT FREEZE OR COOK OUT

1/4 Oz., 7c. Flavors, 51/2 Gal. Mix of Ice Cream 3 Drams, 10c. Flavors, 100 Pounda of Candy

MANY SATISFIED USERS.

Packed 1 Pint Bottle \$5.00 5 " 6-5 " 4.50 (30 Pts.).

Order Now.

Guaranteed to please or money back.

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Manufacturing Chemists and Importers Makers True Fruit Extracts SODA WATER FLAVORS

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"Give Me Caramala Ice Cream"

Never add any other flavor or color to Caramala for Caramala Ice Cream.

PRICES:

Less than 5 gais., \$7.00; 5 gais., \$6.75; 10 gais., \$6.50; 25 gais., \$6.25; 50 gais. and over, \$6.00.



Caramana, an absolutely Pure Food Product, guaranteed under all Federal and State Food Laws. It is not an imitation of caramel or burnt sugar flavor. It is a new, distinct and better flavor.

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CARAMALA is now virtually universally known throughout the United States and Canada, and its users are enjoying an ever-increasing CARAMALA business, embracing also its manifold combination uses.

is manifold combination uses.

CARAMALA MERIT is recognized by ice cream manufacturers not alone in Caramale flavoring value, as evidenced by the instant and sustained CARAMALA response from the public, but also in the CARAMALA physical improvement in CARAMALA ICE CREAM, or any ice cream in which CARAMALA physical improvement in CARAMALA in the first flavoring requirements, as in CARAMALA NUT ICE CREAM, CARAMALA ICE CREAM PUDDING, etc.

CARAMALA, a fluid, requires neither waiting nor preparation.

CARAMALA ICE CREAM is always the smoothest and most firm ice cream in comparison with any other ice cream made from the same stock mix, and hardened under identical conditions.

Directions:-Use one ounce CARAMALA to each gallon in your mix, or full four ounces for ten gallons of CARAMALA ICE CREAM,

Send in your trial order, and if any CARAMALA claim we make is not sustained by our CARAMALA experience, simply return us the shipment within 30 days, at our expense. We make this offer on account of our certainty of your satisfaction, but we want you to feel positive assurance in sending in the trial order.

CARAMALA signs commensurate with order size supplied on request, as well as CARAMALA recipes.

Order direct or through any of the following well-known firms:

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Use the New Concentrate Eliminating All Waste

NEW MEXOCINE

Bean Vanilla, Vanillin, Coumarin and Tonka Flavors

IT IS ECONOMICAL

Use quarter cunce or dessert spoonful to flavor 10 gal, batch Ice Cream. Use quarter cunce or dessertspoonful to flavor 100 lb, batch candy. \$7.00 per pint

pints \$6.75 per pint 10 pints \$6.50 per pint 50 pints 6.00 per pint TERMS: 2% 10 DAYS 30 DAYS NET

Why pay for unnecessary alcohol when it is absolutely worthless from a flavoring standpoint? Why pay freight on water?

Samples on Request



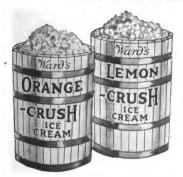
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REX EXTRACT CO.

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257 Pacific Street

Brooklyn, New York City



"We have adopted Orange-Crush and Lemon-Crush as our Standard Flavors."

UECKE DAIRY CO..

Makers of Uecke's Famous Ice Cream

Eau Claire, Wis.

Ice Cream Manufacturers Welcome the "Crushes"

Last year hundreds of ice cream firms tried out the "Crushes" and then adopted them as standard flavors. This year inquiries, orders, and re-orders are pouring in from far and near. It required only one season to prove that Orange-Crush, Lemon-Crush and Lime-Crush are to be just as popular in Ice Creams and Sherbets as they are indrink form. The trade and the public are for the "Crushes." Manufacturers write us that these are the finest flavoring compounds they have ever used. They praise the deliciousness, the flavor-holding qualities, the colors, the uniformity. The "Crushes" are equally fine in Ices, Frozen Custards, Mousse, Parfait, Frappe, and Punches.

Will you adopt the "Crushes" this year? The market is ready-made, waiting for you Here are three of the best-known, best-liked and most advertised fruit flavors before the public. They are new and novel as Ice Cream flavors. Be first to offer them in your territory. Think of the advantage you will have over competition.

Take on the "Crushes" and you will have back of you the tremendous selling influence of our advertising campaigns—the same power that has made the "Crushes" the best sellers of all fruit drinks. This year's drink advertising will be a wonderful help to you in selling Ice Creams and Sherbets. Also there will be a special ice cream campaign.

Bigger Profits for You

When you use these flavors your profits are larger per gallon than on any other high-grade cream you can make. This is because of the splendid quality and purity of the "Crushes." Write us and let us quote you figures to prove that these flavors will make you more money as well as more trade. For information about prices, profits, selling helps, and exclusive rights, fill out and mail this coupon:

Sign and Send This Coupon Now

ORANGE-CRUSH COMPANY, 314 W. Superior St., Chicago.

Send us, without obligation, details regarding Ward's Orange-Crush, Lemon-Crush and Lime-Crush Compounds for flavoring Ice Cream and Sherbet, and about the profits on these products.

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Warner-Jenkinson Co.

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Manufacturers of Ice-Cream Makers' Supplies and Certified Food Colors



Are you using

Red Seal Milk of Orange

for flavoring your orange ices? If not, you are missing out on a good thing. One to one and a half ounces in ten gallons of finished product does the work. Easy to use. Very economical.

Are you using

Red Seal Giant Vanilla

for flavoring your Vanilla ice cream? If not, you are again missing out. "Giant" is all that its name implies. The only thing small about it is the price.

Are you using

Red Seal Purity Powder

for stabilizing your mix? If not, you don't know what good ice cream is. You can cut down on Condensed Milk when using Purity and obtain an altogether superior product.

Are you using

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If not, read

THE BOTTLER'S AND ICE-CREAM MAKER'S HANDY GUIDE

It tells you all about RED SEAL GOODS and how to make quality ice cream.



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Write for Booklet "VANILLA"

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GENUINE FRUIT EXTRACTS

VANILLA AND ALL OTHER FLAVORS AND EMULSIONS
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WILL NOT FREEZE OUT

NO ALCOHOL

VANILLA EXQUINTA

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Finer, Stronger and Better Than VANILLA EXTRACT

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Write today for prices and particulars

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Here It Is!



A compound vanilla that WILL NOT FREEZE OUT.

A strong vanilla that will leave an AGREEABLE TASTE.

Three ounces to a ten-gallon batch gives a cream with a REAL VANILLA FLAVOR.

Send us your address and we will mail you a sample.

Always Uniform

8% Butter Fats

prices.



This year there is so little evaporated milk being packed that a hot summer is bound to

A contract with us will protect you.

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You Can't Lose

If prices fall you get your milk at our reduced rates; and if prices rise—which is much more likely—you have your contract prices—the lowest we believe it is possible to make.

See our salesman or write to us.

H. A. Johnson Co.

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Folks Eat Ice Cream Because They Like It

They Don't Like It and Don't Eat It
—Unless the Flavor Is Right

MAYBORN PRODUCTS ARE RIGHT

MAYFLOWER

Ice Cream Flavoring \$2.75 Per Gal. BBl. Lots \$2.50 Per Gal. 5 BBl. Lots



VAN-COM-TON

Ice Cream Flavoring
Unusually Mature
\$3.50 Per Gal. BBl.
\$3.25 Per Gal. 5 BBl.

Scientific methods apart from those heretofore employed insure a finished product which retains the Full Strength, Bouquet and Aroma of the raw material. An uncommon result in the business but the rule with Mayborn Products.

Send for Trial TIB MAYBORN FOOD PRODUCTS CO. ARE YOU barrel Price CLEVELAND, OHIO. ACQUAINTED?

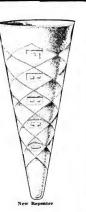


CONES

That Sell Ice Cream

We have added a New Cake Cone to our 1921 line, which is the acme of Flavor, Color, Crispness, and Shipping Quality. Years of experience as Bakers and Ice Cream Makers are reflected in the Big Repeaters, so called because they repeat wherever sold. Our facilities enable us to give the best of service. Secure our Catalog and Prices.

Cone Department, Cincinnati, Ohio
The French Bros.-Bauer Co.



Havacone

Good ice cream deserves a good container. "Havacone" pure cake ice cream cone is just that kind of a cone. A cone children can eat with safety and do eat with delight. A cone that is never thrown away, but eaten down to the last crumb. Serve your

ice cream in "Havacones"—it's serving ice cream and cake.

"Havacone" is the pure food ice cream cone. Made from only the purest ingredients. No grease; no coloring matter; no chemicals or preservatives of any kind. Stays crisp and palatable indefinitely under all climatic conditions.

Packed 100 cones to the box—10 boxes to the shipping carton—and packed under our new system, which eliminates breakage. Each shipping case contains one "Havacone" display card in four colors.

Red for sample and prices

send for sample and pro-



here ain't

THIRD ST. & VAN ALST AVENUE

CONE COMPANY OF AMERICA,







he NEW MILAREN REAL CONE FOLLY PROTECTED BY WITHER STRAIL WHITELY THE PROPERTY OF THE STRAIL WHITELY THE STRAIL WHITELY OF THE STRAIL WHITELY THE STRAIL WHITELY OF THE STR

In this New McLaren "Real Cake" Cone we offer the trade a sugar-sweetened article that is in a class by itself.

It is scientifically designed to ship with a minimun amount of breakage, is distinctive in appearance, and at the same time possesses the superior eating qualities that have always characterized McLaren's Ice Cream Cones.

EXCLUSIVE FEATURES

1—Smoothly Moulded Ring Around Top.

Strengthens top of cone.

Prevents breakage when filling with ice cream.

Improves appearance.

Improves appearance.

2—The Name "McLAREN" Moulded in Rim of Cone.

Prevents imitation.

3-Breakage Protection Ring.

Prevents wedging action of cones in shipping.

Keeps them from splitting and sticking together.

Strengthens top of cone.

(Illustration shows how cones rest entirely on this ring. Walls of cones do not touch.)

This new Cone is the result of years of study and the investment of many thousands of dollars. The manufacturers have aimed to make the very best cake cone possible, and at the same time keep the price within easy reach of every retail dealer.

Enterprising jobbers will be the first to show this new product in their territories. It is sure to be a winner for next season. Write for samples and very low introductory price.

MSLAREN PRODUCTS COMPANY



Western Distributing Station, Kansas City, Mo.



"TALBO

THE PERFECT STABILIZER FOR ICE CREAM

TRIED, APPROVED AND USED BY THE ICE CREAM TRADE FOR THE PAST FIVE YEARS

Richo Karaya

THE PUREST OF PURE GUM DIRECT FROM MILLERS TO CONSUMERS

WRITE US

F. E. RICHARDSON & CO.

132 NASSAU STREET

NEW YORK CITY

RIPPEY'S Powdered Foamoline

Specially Prepared For Manufacturers

ICE CREAM. Sherbets.

Fruit Frosts AND

Water Ices

dry, add your cream or milk

FOR A LIMITED TIME WE WILL SEND BY MAIL, POST-AGE PAID, Full y pound on receipt of 25c. Also our Formulas for making lee Creams, Sherbets, Fruit Frosts, Water Ices, Soda Water Syrup from Canned Fruits, Mulied Free on receipt of name and address. Caution: Rippey's Powdered Framoline is packed in one pound boras with registered trade-mark and signature of William Rippey on every box. Never sold in bulk.

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No. 108 E. Second Street

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THE WORLD'S BEST FOOD GELATINE

HAROLD A. SINCLAIR, 160 Broadway, NEW YORK

Some of the REASONS WHY you will want DELFT GELATINES

LOWEST in BACTERIA

No Objectionable Odor to Overcome

Requires Less Flavor to a Batch

Perfect Standardization

Purest as analyzed by the American Official Method

FREE OF SULPHUR DIOXIDE "Price is a relative term-quality always a concrete fact,"

EVERY one of the "Reasons Why" in the column on the left has been proved by actual test. In buying Delft Gelatine, you are assured of

QUALITY BEYOND QUESTION ECONOMY WITHOUT EQUIVOCATION



Rockhill & Victor

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Gelatine is the most efficient of all stabilizers for Ice Cream

WHITTEN'S GELATINES Are Standard

STRENGTH. PURITY AND UNIFORMITY GUARANTEED

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RYSTAL GELATINE

IN PACKAGE OR IN BULK

The most satisfactory stabilizer that can be used. Made in the largest and best equipped gelatine plant in America. Free from injurious chemicals or other impurities. A standard product most economical in the long run.

If you are particular-Specify CRYSTAL GELATINE.

CRYSTAL GELATINE COMPANY

121 Beverly St., Boston, Mass.

New York San Francisco







The Advantage of a Standard

A good product of standard quality is the product that people want. Any article whose quality varies is on dangerous ground.

The recent sugar shortage convinced many manufacturers of one thing—that, despite the drains of adverse conditions, the products of the world's largest sugar refiners were always of a standard quality—the best. Our line comprises over fifty grades and varieties of standard quality cane sugars. There is one for every need.

American Sugar Refining Company

The Most Complete Line of Sugar in the World

How to Make Ice Cream

We are new to you, but experienced in the manufacture of High Grade Ice Cream Gelatine, and are anxious to prove our worth.

Our Gelatine complies fully with all State and Federal Pure Food Laws.

Its use insures good texture and a smooth cream.

We guarantee Uniformity, Purity, Service, and Price.

To Prove This, IS:

Only possible by giving us an opportunity to demonstrate our product, by placing a trial order with us.

Or, if you will send a sample of your present supply, we will match same, and send you a duplicate article.

Send your order today.

Be sure to try us before contracting.

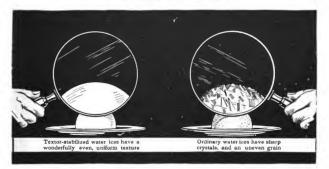
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IMAGINE luscious ices which melt upon the tongue without a hint or suggestion of roughness!

That is the kind of waterices which manufacturers are now making with TEXTOR, a stabilizer for water-ices and sherbets. Simply mix Textor with the sugar dry, add the water, then the fruit; and freeze.

There is a big and profitable field for finer-textured water-ices. Write us to "Explain Textor."

S. GUMPERT & CO.

Bush Terminal

Brooklyn, New York



MERIDALE MILK POWDER Whole and Skimmed Milk Powder of Quality

Flavor, color and solubility are some of the marked qualities



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AYER & MCKINNEY

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BRAND

EVAPORATED MILK IN GALLON CANS

Manufactured Especially For

Ice Cream Manufacturers' and Confectioners' Use

FINEST OUALITY

The beautiful flavor of the fresh milk concentrated and absolutely preserved in the air-tight can

NO SPOILAGE

NO WASTE

TWELVE YEAR REPEAT ORDERS OUR BEST REFERENCE
NO PROFITEERING WRITE OR WIRE

AVISTON CONDENSED MILK CO., AVISTON ILLINOIS

MILK PRODUCTS

We are manufacturers of

SKIMMED SWEETENED CONDENSED MILK

WHOLE SWEETENED

CONDENSED MILK

SPRAY SKIM MILK POWDER CREAM

ICE CREAM MIX SWEET UNSALTED BUTTER

Let us have your inquiries. Prompt Shipments.

Ice Cream Manufacturers' Supply Ass'n 453 Hudson St., New York City

YOU have the machinery to make good Ice Cream

WE have the machinery to sell it

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Ice Cream Cabinets

The special construction of cabinets made by us insures durability and long life under all conditions.

THE PRICE IS REASONABLE

Send for Price List

American Retinning Co. 819-23 N. Lawrence St., PHILADELPHIA, Pa.



ORDER YOUR SUPPLY NOW

WE PACK CONFECTIONER SIZE Six 8-lb. Cans to Case EVAPORATED MILK f.o.b. your city

FULL CREAM CONDENSED MILK 8% Butter Fat, 42% Sugar, 28% Milk

SWEET SKIM CONDENSED MILK 42% Sugar-28% Milk Solids Barrel Goods-f.o.b. Johnson Creek Write us for prices.

FRED. C. MANSFIELD CO. Johnson Creek, Wis.

We Make Prompt Shipments of

Plain Condensed Milk Concentrated Milk Sweet Cream Barreled Sweetened

GIFFORD & CULLUM **QUALITY AND SERVICE**

Condensed Milk

413 N. State St., Chicago, Illinois





THEY are coming soon—those sweltering days when customers will be frantically phoning for deliveries; and the men in your plant will be desperately forcing production.

The greatest difficulty in maintaining quality then will be the slow, tedious, old fashioned process of ripening by the calendar.

Why not ripen by the clock—ripen in hours instead of in days? You can—and better the quality of your product at the same time—by using

GUMPERT'S Ice Cream Improver

Through speeding up the release of butter-fats, Gumpert's Improver brings about all the benefits of ripening in a fraction of ripening time. It acts while the mix is still sweet; avoiding the accumulation of bacteria and lactic acid.

It results in a smoother, richer and creamier tasting ice cream

S. GUMPERT & CO.

Bush Terminal,

Brooklyn, New York

The C. Nelson Ice Cream Cabinets (Patented)

C. NELSON BRICK CABINET Patented May 8, 1906



42 OT. BRICK CABINET WITH ICE RAIL Patents, May 8, 1906; Sept. 9, 1919





"Confessed the best when put to test"

The C. Nelson Patented Ice Cream Cabinets are especially adapted to Hot Climates -South America, Honolulu, Philippines, Cuba and all Southern States, where others fail.

We've Got It On Them All

Because We Are:

- 1st. Specialists in the manufacture of Ice Cream Cabinets.
- 2nd. Have had 30 years' actual experience in the manufacture and keeping of Ice Cream, from which practical experience the Nelson Cabinet was evolved.
- 3rd. Nelson Cabinets are constructed of California Red Wood and White Cedar. Both sanitary and everlasting.
- 4th. For this reason they are proof against Rust, Brine, Leaks and Decay.
- 5th. They are Insulated with Granulated Cork, the best non-conductor of heat and cold known.
- 6th. They will save their cost in three months' service.
- 7th. They will keep Ice Cream in perfect condition 24 to 36 hours with one packing of Ice and Salt.
- 8th. They will last a lifetime.
- 9th. We manufacture Ice Cream Cabinets exclusively, and build but one grade-This we guarantee.

The 42-quart brick cabinet has a two-compartment container, thus giving the advantage of a double cabinet with single ice space.

ATTENTION

Responsible parties (particularly wholesale ice cream dealers) may order from 1 to 100 Nelson cabinets, place them in practical use, and after 30 days, if not entirely satisfactory, return at our expense for freight both ways.

CATALOGUE AND PRICES UPON REQUEST

C. Nelson Manufacturing Co. 23rd and Division Sts.

ST. LOUIS, MISSOURI

The Frand Rapids





Much of Your Success Next Season Will Depend on Your Choice and Supply of Ice Cream Cabinets



If there is any one thing the history of the ice cream cabinet business emphasizes, it is the value of anticipating requirements far in advance. From the standpoint of profits, and the service you will be able to render your customers now, right now, is the most opportune time to settle the cabinet proposition for next season.

If you are not familiar with the Grand Rapids Line this is the time to send for the catalog. It will show you why such a big percentage of the prominent ice cream manufacturers specify Grand Rapids Cabinets year after year. It show you how to practice true economy in this department of your business.

The importance of immediate action must be stressed. Take up your requirements with us at once.

Grand Rapids Cabinet Company

Successors to CHOCOLATE COOLER COMPANY

80-84 Alabama St., N. W., Grand Rapids, Mich.

New England Sales Office and Warehouse Merrow Bros., Inc. 44 N. Market St., Boston, Mass. South Eastern Sales Office and Warehouse Cherry-Bassett Co. 33 So. Charles St., Baltimore, Md.

North Western Sales Office and Warehouse
A. C. Black
515 Lumber Exchange, Minneapolis, Minn.



SERVIC

Means more than the mere asse lumber and metal into ordinary tubs nets:—It means the careful selection rials, and the assembling of these into scientifically designed tubs and that give lasting and economica Note the securely splined double bot Stout tub—the sturdiness of Stou and you will agree that the ice cre facturers' interests receive serious tion in the Stout organization.

Write Today for literature and prices. Investigate fully before you buy and your orde for "STOUT" cabinets and tubs.

24-HOUR DELIVERY SERVICE THE RUSH SEASON

Stout Cr Means more than the mere assembling of lumber and metal into ordinary tubs and cabinets:-It means the careful selection of materials, and the assembling of these materials into scientifically designed tubs and cabinets, that give lasting and economical service. Note the securely splined double bottom of the Stout tub-the sturdiness of Stout cabinets and you will agree that the ice cream manufacturers' interests receive serious considera-

for literature and prices. Investigate the Stout fully before you buy and your order will call for "STOUT" cabinets and tubs.

24-HOUR DELIVERY SERVICE DURING



Stout Crate Co. Des Plaines, Ill.

Chicago Office 509 S. Wabash Avenue

ICE CREAM LONGWEAR CABINETS

The Best That Money Can Buy

MADE IN ALL SIZES one to four compartment bulk, brick cabinets, combination cabinets.

We use exclusively genuine Virginia white cedar tubs of our own make in our cabinets, which are watertight; also superior insulation, and specially designed all brass drains which will not leak and last forever.



DESCRIPTIVE FOLDER AND PRICE LIST UPON REQUEST

Order Now and Avoid Delays in Late Shipments

We make only one grade and that the best. Each cabinet carries our guarantee. Responsible parties may order out cabinets on approval and if not as represented or not found satisfactory return and we will pay transportation expense.



Genuine Virginia White Cedar and Cypress Ice Cream Packing Tubs and Pails

All Styles and Sizes.—Extra heavy and strong bottom construction. Many tests have proven Genuine Virginia White Cedar and Tide-Water Cypress the most resistant woods to the destructive action of salt water—both woods defy decay. Beware of so-called white cedar and inferior cypress. Demand the genuine.

Write for prices on your requirements for the coming season

MANUFACTURED BY

VIRGINIA TUB COMPANY

Bristol - Virginia

Economy Ice Cream Cabinets

Economical—Efficient—Substantial

Most economical in use of ice—most efficient in preserving quality of cream—substantial construction and absolute insulation throughout. Most approved design and finish. Made in one to four compartment—sizes twelve and twenty quart. Either metal-lined or in tub cabinet.

A Word to the Ice Cream Manufacturer

Anticipate your requirements for the coming year. Place your order now and assure yourself of a complete supply of cabinets with which to meet the demands of your customers. Bear in mind: the sooner you order, the more promptly we can ship.

Write for prices and particulars.

Homer Manufacturing Company
Homer City Pa.



Northey Cabinets

REST BY TEST



For Sale by All Legitimate Dairy Supply
Houses

Manufactured

NORTHEY MFG. CO. Waterloo, Iowa.

Order Cabinets Today!



Now we can serve you best.

The demand for-

Schroeder Perfection Cabinets

—is increasing daily. So order today and you will have your cabinets when you need them.

"Insulation is the thing"

JOHN SCHROEDER LUMBER (O.

WALNUT ST BRIDGE ... MILWAUKEE, WIS.

Brooks Cabinets



Are constructed entirely of wood; brst grade Guif express for outer case and white eedar for inner compartments or tubs. Tubs scientifically treated by secret process making them absolutely water-tight. Cabinets interlined with granulated cork. Drain pipes and faucets of heavy brass. Saves atmost 68 per cent, of ice, sait and labor.

BROOKS CABINET CO. 1000 Block W. 27th St., Norfolk, Va.

CABINETS

"Built right, price right, ARE RIGHT."
"NO EXPERIMENTING WITH OUR CABINETS."



WE HAVE SPECIALIZED IN BUILDING ICE CREAM CABINETS FOR 15 YEARS, AND KNOW WHAT THE TRADE DEMANDS.

Before placing orders elsewhere WRITE FOR PRICE LIST AND DISCOUNTS

HENRY SHULTZ

Office and Factory 24-26 Cherry Street, New York City



ICE CREAM



Increased Sales means Increased Gallonage

The Ice Cream manufacturer can only increase his sales by increasing the consumers' demand.

How he can best do this has long been one of his problems. But experience has shown that, beyond question, the best way to reach the consumer is through the Dealer. And please remember—your Dealer is more than just a Dealer. He is your Salesman and as such should be furnished with ideas, suggestions and advertising material which will enable him to successfully sell your product. He can only increase his sales by your cooperation in sales effort and good advertising.

We can furnish you distinctive Advertising material for Dealer display and direct appeal to the consumer. We shall be pleased to furnish you a definite plan of Advertising that will bring results. Consider your requirements at once. The Ice Cream season is here. Write or wire us.

The BURDICK-GARRISON COMPANY

Two Twenty-five Fourth Avenue New York

Advertising Specialists to the Ice Cream Manufacturer





CIRCLES FROM EAST TO WEST SQUARES

PARA-PARCH

THE PREMIER ICE CREAM PAPER

Order Your Season's Requirements Now

THE HENLE PAPER MANUFACTURING CO.
535-545 East 79th Street, New York City

A "MAKE IT PAY" IDEA

If a pleased customer is your best advertisement, why lose the advertisement nine times out of ten?

Tie Your Name to Your Product



Our tin ice cream spoons with your name stamped in the bandle cost no more—probably less—than you pay for the plain kind, and they tell the customer who pleased him ten times out of ten.

WRITE FOR PRICES AND A SAMPLE

Our New Ice Cream Catalogue Will be Mailed Upon Request



Freezers; tools; cans and carry-outs; brick moulds; brick tanks; tubs; buckets; and a hundred and one other things on which you can make it pay to let us quote you.

We issue Catalogues of Bake's Soels and Viensils

Weissue Catalogues of Baker's Gools and Utensil.
and Confectioner's Gools and Utensils

THE MAAG CO.

509-511 W. LOMBARD ST., BALTIMORE, MD.



THE best regulations for the protection of buyers "yet seen from a trade association" is the pronouncement of the Commercial Bribery and Tipping Review of Washington on the Fair Practices Code of The Association of Ice Cream Supply Men.

The ice cream industry is counted one of the outstanding industries of the country both for the rapidity of its growth and for the distinctively national character of its product. Catering to it and pledged to its further expansion, The Association of Ice Cream Supply Men is ranked no less high by those who know industrial conditions and practices—and it is so ranked expressly for the safety in their purchases that it affords the ice cream manufacturers of the continent.



Safety to the Buyer through the Fair Practices Code



The Association of Ice Cream Supply Men
1328 BROADWAY NEW YORK CITY

Your Advertising Appeal

Can Be No Greater Than That of Your Illustrations



MATHEWS' illustrations and Mathews' advertising material and service will so link your name with the thought of quality and attractiveness that the two will be inseparable.

USED BY "LIVE" ICE CREAM MANUFACTURERS

Let a Mathews' Representative show you the advertising material and plans that are building up the sales and good name of hundreds of progressive American and Canadian Ice Cream manufacturers.

YOU WILL BE SURPRISED AT THE MODERATE PRICE



FREDERICK C. MATHEWS COMPANY

"SERVANTS TO THE DAIRY INDUSTRY"

P. O. BOX 834

DETROIT, MICH.

This insert was produced complete by the Frederick C. Mathews Company

A Selling Service That Sells



MATHEWS' advertising material and service will back up your business, making your work easier and multiplying the effect of your efforts.

WE CAN HELP YOU

No ice cream firm is too small nor too large to profit by Mathews' ice cream advertising. If you are producing good ice cream and want to develop your field, our advertising material will help double your sales.

WRITE TODAY TELLING US YOUR CONDITIONS



FREDERICK C. MATHEWS COMPANY "SERVANTS TO THE DAIRY INDUSTRY"

P. O. BOX 834

DETROIT, MICH.

This insert was produced complete by the Frederick C. Mathews Company

Five Hundred Dollars For Displaying Ice Cream

THE Frederick C. Mathews Company of Detroit, Michigan, are awarding twenty generous prizes, ranging from \$75.00 down to \$5.00 for the best dressed windows and the best trimmed stores of the promotion of the sale of ice cream.

This competition is wide open to every store handling ice

cream in any way in Canada and the United States.

The prizes are as follows: 1st, \$75.00; 2nd, \$50.00; 3rd, \$25.00; 4th, \$15.00; 5th, \$10.00, and fifteen additional prizes of \$5 each.

The Above Prizes Are Duplicated To Ice Cream Salesmen Thus:

The salesman who handles the accounts of the dealers who win more of the total amount of the prize money than those handled by any other salesman, will receive a first prize of \$75.00. The next highest salesman will receive \$50.00 and so on. In the event of ties, prizes identical in character will be given to each of those so tying.

The following Ice Cream Manufacturers have consented to form the Committee that will make the awards:

F. F. THOMPSON, City Dairies Co., St. Louis, Mo.

BURT WALKER, Royal Ice Cream Co., Tacoma, Washington.

L. HUGHES, Hughes Ice Cream Co., Los Angeles, Calif. J. W. CARLYLE, Crystal Dairy, Ltd., Calgary, Canada.

P. P. LECOINTE, Montreal Dairy, Ltd., Montreal, Canada.

JOHN SEMON, Semon Ice Cream Co., New Haven, Conn.

W. J. KENNEDY, Detroit Creamery Co., Detroit, Mich.

It is impossible to give full details of the Contest in this space. Write today for particulars and start at once to interest your dealers.

As indicated above, this competition is open to all without any obligations, expressed or implied.

Closing Date of Prize Contest, September 7, 1921.



FREDERICK C. MATHEWS COMPANY

"Servants to the Dairy Industry"

P. O. Box 834

DETROIT, MICHIGAN

THE GREAT



THE PERFECT
ICE CREAM FLAVOR

\$3.50 per gallon In Barrels

Manufactured and Distributed | Solely by

Massey & Massey Co.

Expert Vanilla Chemists

1214-1216 Webster Ave.

C H I C A G O

U. S. A.

THE ICE CREAM TRADE JOURNAL

Vol. XVII

NEW YORK, APRIL, 1921

No. 4

SOUTH DAKOTA ICE CREAM MEN ORGANIZE

Ice Cream Manufacturers of South Dakota Form Association—Will Be Affiliated With State Dairy Association

Sixteen ice cream factories were represented at a meeting of the ice cream manufacturers of South Dakota, held for the purpose of organizing into an association. The meeting was held at the Cataract Hotel, Sioux Palls, on Thursday morning, March 24, in connection with the fifteenth annual convention of the South Dakota State Dairy Association and was presided over by W. C. Gagnon, Huron.

The following officers of the new association were elected: President, F. J. Herrick, Mitchell; vice-president, W. C. Gagnon, Huron; secretary, E. E. Thompson, Mitchell; and treasurer, Chris Rognes, Madison. The following committee was then appointed to draw up a constitution and by-laws and to take proper steps for affiliation with the National Association of Ice Cream Manufacturers: A. P. Ryger, Brookings; W. G. Arl, Rapid City; G. H. Gould, Sioux Falls; E. A. Binder, Yankton and C. Hopkins, Redfield. The dues were fixed temporarily at \$5, which the treasurer immediately began to collect.

After this preliminary organization work was out of the way, several items of interest were discussed.

James Sorenson, Dairy Commissioner of Minnesota was called on and cited the foolishness of the lack of uniformity in our state and federal standards for ice cream. He emphasized the importance of joining the National Association and of getting together on a uniform ice cream standard and then really working for the adoption of that standard by the state and federal governments.

Lou Beardsley, of the J. G. Cherry Co., spoke along the same lines and stated that the federal committee on standards was ready to lower the standard if the various states and associations could agree on something reasonable.

H. E. Fowler, of the Creamery Package Mfg. Co, mentioned that this was a day of cooperation among "competitors" and in-as-much as he was partly responsible for them getting together he offered some reasons why they should work together.

The Chairman called on State Dairy Expert A. P.

Ryer, who mentioned the losses due to bad debts which could be better controlled by an organized body. He stated that some retailers would run up a bill with one dealer and then shift to another and repeat the process. He also thought that the return of empties could be looked after better. He stated as his opinion that it would be easier for his department to cooperate with them if they were organized.

At the suggestion of one of the ice cream manufacturers they voted to hold their meetings at the same time and place as the State Dairy Association and to be more or less affiliated with it. It was left to the committee on by-laws and constitution to decide on the exact status of the Association. This committee plans to meet in the near future at which time no doubt the Association will be officially named.

The chairman then called on Prof. T. H. Wright, Jr., of South Dakota State College, who gave a talk on the subject: "The Composition of the Ice Cream Mix."

In this talk he emphasized the importance of the composition in relation to cost and profits, quality and overrun. He also mentioned the need of uniformity in order for a product to sell well. In South Dakota where the fat standard is 14 per cent, the total solids are fairly high even without the addition of serum solids but he advocated the addition of about 2 ner cent, of these solids.

Prof. Wright discussed briefly the method of calculating formulas and suggested the use of the 100 lb. basis rather than that of a mix which should make so many gallons of ice cream. Some of the factors affecting overrum were then mentioned as well as the weight method of calculating overrum. He gave a formula for calculating the weight of a gallon of mix and one for figuring the weight of a gallon of ice cream of any specified overrum from a known mix.

At the conclusion of this talk the ice cream men adjourned and the meeting was turned over to the State Dairy Association proper.

KANSAS LOWERS STANDARD

A new law, recently enacted, amending section 9926 of the General Statutes of Nansas, 1915, among other things, lowers the butter fat standard from 14 to 10 per cent. Sections of the law pertaining to ice cream reads as follows:

(E) (1) Ice cream is a frozen product containing not less than ten per cent. milk fat, and not less than a total of twenty per cent, milk solids; said product consisting of a flavored, sugar-sweetened mixture of cream or cream and milk, or the sweet, pure products of cream and milk, with or without the addition of gelatine, vegetable gums, or such other wholesome stabilizers as may be approved by the state dairy commissioner, to which mixture may be added pure, fresh sweet, wholesome eggs, fruit or fruit juice cocoa, chocolate, or nuts. (2) Ice cream offered for sale or sold shall weigh not less than four and three-quarters pounds per gallon. Violation of this provision shall subject the offender to the penalties of this act. (3) All milk, cream, and milk product shall be pasteurized before used Pasteurization in the manufacture of ice cream. for the purposes of this act is defined to mean the heating of the milk, cream, or milk products used in the manufacture of ice cream to a temperature of at least 145 degrees Fahrenheit and held at said temperature for thirty minutes; or the heating thereof to 180 degrees Fahrenheit for thirty seconds. (F) (1) Samples of ice cream taken for official test under section 3 of this act shall be taken with a butter trier from a full or nearly full can of ice cream in solid condition, or from the ice-cream freezer. (2) Every person, firm or corporation purchasing ice cream in cans which are to be returned to the manufacturer by a common carrier shall cause such cans to be washed and cleansed as soon as emptied, and shall within 72 hours thereafter deliver the same to the common carrier for shipment to the owner. Failure to do so shall be unlawful and subject the offender to the penalties provided by this act. (G)
(1) It shall be unlawful for any person, firm or
corporation except churches, lodge or other benevolent societies to engage in the manufacture of ice cream for sale without having first obtained a permit granted by the state of Kansas, signed by the dairy commissioner and bearing his official seal. Such permit shall be granted for a period of one year, or from the date of issuance to the succeeding first of March. Any violation of this provision shall subject the offender to the penalties provided by this act, and in addition thereto, his license may be revoked upon convic-

Commenting on this new law, H. M. Jones, State Dairy Commissioner of Kansas says:

If fel that waxes very good law one which cerey icc gream manufacturer can live up to and with this new standard I feel that we will have better ice cream. A large number of the small manufacturers have not been adding additional solids and may experience some difficulty at first in making this standard. But I feel that in the long run they will soon realize they are making better ice cream. In regard to the net weight standard, I will say that after I had made some investigation I was not ready for a net weight, but after discussing the weight of 4½ pounds per gallon with some of the people, I decided that we were making a weight which everyone in Kansas could be up to thing, as is also the clause in regard to the return of empty packers. I also think that the clause requiring the registration of all manufacturers is a good thing. There are a num-

ber of small concerns which make ice cream during the flush season and the law requiring them to register will help us keep track of them.

RECORDS HELP SOLVE PROBLEMS

Records of operation, records of maintenance, records of cost—all these are vital to the effectiveness of any system for the control of motor trueks writes George W. Grupp in Administration. He saves:

The exact system depends on the kind of business one is in; whether one is a local or a national distributor; the necessity of quick turnovers, as in a chain of stores; the necessity for carrying a fresh stock of supplies, and yet at no time being out of supplies; and on loading and unloading facilities.

One may start with a simple report on each trip such as the following: time of arrival at each stop; time of leaving each stop; time taken to load; time taken to undad; weight of goods delivered; odometer readings; gasoline readings; total time of trip; total number of trips; fuel and ferriage consumption; and a report upon condition of weather and roads.

One concern, from data somewhat similar to the above, has worked out the theory that a particular kind of goods should go into a particular capacity truck.

The rule of this concern is to have all three-and five-ton trucks assigned the task of hauling factory supplies and raw supplies from the freight houses and boats to the warehouses. They are detailed to haul all store equipments, and are used exclusively for long-distance runs.

The one- and half-ton trucks are used by privatement of the miles, and for carrying supplies to their chain of stores. The three-quarter-ton trucks are used in marketing for eggs, vegetables, and the like.

Few suggestions for facilitating the keeping track of a motor truck's daily movements are so simple as the mechanical recorder. This instrument gives the owner exact information as to the number of hours this truck was running or standing still; likewise the time of day at which it was running or standing. The truck dispatcher knows in advance what work the truck has had to do, and experiences little difficulty in identifying the various trips and stops shown on the chart.

Records kept of performance have lielped or sionally to solve complicated problems.

DR. ALSBERG RESIGNS

Dr. Carl L. Alsberg, Chief of the Bureau of Chemistry, U. S. Department of Agriculture, recently resigned his position to become one of the Directors of the New Food Research and Nutrition Institute at Stanford University, California.

Problems relating to feeding people in the mass and to national food supplies will be undertaken. At conferences of the allied nations after the war recommendations were made to the respective Governments that this subject be taken up as a national problem. At the suggestion of Herbert Hoover the Carnegie Corporation decided to make available funds for such work, which will be carried on at Stanford University.

Dr. Alsberg is a native of New York, N. Y., and was appointed Chief of the Bureau of Chemistry in 1912, on the resignation of Dr. Harvey W. Wiley.

Dig and Loogle

SHARPLESS-HENDLER COMPANY BUILDS MODERN PLANT

Arrangement of Freezers and Combination Loading Court and Garage Are New Features in Wilmington Factory

The Sharpless-Hendler Ice Cream Co. recently completed its new ice cream plant at Market and 26th sts., Wilmington, Delaware. Built of brick and concrete, form "M" construction, the three-story building is fire proof throughout and is strictly a daylight plant, with windows on all sides. It is a gravity plant throughout.

The freezer room and the hardening rooms are located on the first floor—the freezer room facing on 26th st. The freezers are arranged according

20-ton ice making tank with room for a second one, also an ice storage of 200 tons capacity. In the floor of the lice storage are placed two Creasey crushers direct connected through reducing gears to motors, the crushed ice going by gravity to the wagons and shipping balforms.

On the second floor over the hardening rooms and covering the same area is the sweet cream storage insulated with 6 inches of Nonpareil cork. Extended along the front of this floor are the offices. Adja-



EXTERIOR OF PLANT

to an idea of L. M. Hendler. Eight Miller freezers are placed in pairs with the rear to the hardening rooms and with a small drop gutter between each pair in which is a roller conveyor leading through a small self-elosing door into the hardening room. This does away with any lifting of cans. The cans after filling are shoved onto the conveyor and into the hardening rooms.

The hardening rooms, three in number, are located in the center of the floor and have a capacity of 13,000 gallons with a shipping vestibule that will accommodate twelve hand trucks. These rooms are insulated with eight inches of Nonpareil cork board.

The shipping platform extends the width of the building and is 15 ft, wide. The driveway, which is 33 ft, wide through the building, is so arranged that it can be used for storing and charging eight electric trucks without interfering with the loading and shipping. Thus the driveway serves both as a loading court and garage.

The brick cutting room is located in the front of the building facing Market street and in full view of pedestrians passing the plant. The rear of the first floor is equipped for can washing and is also used for can storage.

Over the driveway on the second floor is placed a

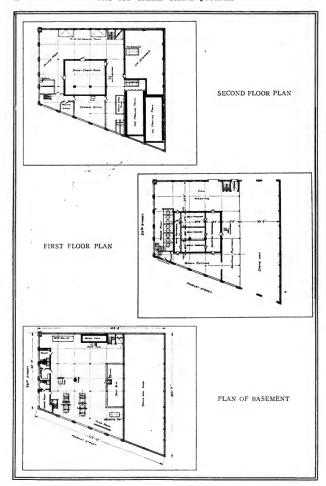
cent to the offices is located a well equipped laboratory while the remaining portion of this floor contains modern equipment for mixing, pasteurizing and holding.

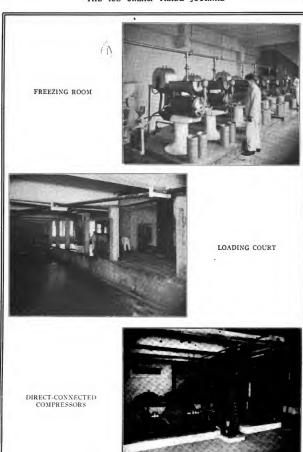
The lay of the land is such that the basement which is used as an engine and refrigerating room has ample light. The present refrigerating equipment consists of one 50, one 30 and one 12-ton York enclosed high speed compressors direct connected through Turbo gears to Westinghouse motors. Provision has been made for doubling this capacity. The freezer brine tank located in one corner of the basement is of ample size to take care of future growth. The brine pumps, which are of turbine design, are direct councerted in duplicate. The boiler equipment consists of one 50 h. p. Eric City return tubular boiler. A truck charging generator is also located in the engine room.

At one end of the basement is located locker rooms for the employees with shower baths and other appurtenances for their comfort.

Under the shipping platform is a salt bin of ten car capacity. The salt is conveyed by means of an elevator to a service bin on the third floor and from there is spouted to the shipping platform.

The third floor is used for general storage and





as a work shop. The ammonia condensers occupy a portion of the third floor over the ice tank. The water cooling system which is of the spray type, is located on the roof.

All of the wearing floors throughout the plant are layed with vitrified brick paving. The building is served by an Otis clevator.

The plant, built for a daily capacity of 4,000 gallons, was designed and installed by the K. W. Schantz. Inc. The building was erected by the Standard Concrete Steel Co.

AMERICAN ASS'N REORGANIZED

An important reorganization was effected at the tenth annual meeting or the American Association of Refrigeration held at New Willard Hotel, Washington, March 25 and 26. The reorganization federates a number of refrigerating organizations into one association, to be known as the American Association of Ice and Refrigeration.

The function of the new Association will be to represent the interests of refrigeration as a whole, to have relationship to international associations and the world-wide development of refrigeration; to represent the industry in cooperation with the Government in all departments and commissions, whether legislative or administrative, and to bring to bear a united impact in dealing with the authorities in a constructive manner; to promote research work and experimentation by the Government and in educational institutions; and to bring together for mutual conference and consultation the representatives of the refrigeration industry in order to better coordinate activities, prevent duplication and establish forward movements in the field of ice and refrigeration,

The independence and initiative of each constituent organization is to be maintained and further developed by the reference of specialized matters to the particular body handling such items.

At the Washington meeting the following organizations joined the federation: Cold storage section, American Warhousemen's Ass'n; National Ass'n of Ice Industries; National Ass'n of Practical Refrigerating Engineers; U. S. Fisheries Ass'n; New York State Cold Storage Ass'n.

Other associations, including the American Society of Refrigerating Engineers and the Eastern Ice Manufacturers' Ass'n were represented at the meeting and are expected to join. And among those considering associate membership are the National League of Commission Merchants, the American Meat Packers' Ass'n, the International Apple Shippers' Ass'n and the National Dairy Products Committee.

Officers of the reorganized Association were elected as follows: President, Frank A. Horne, New York; first vie-president, David A. Brown. Detroit; second vice-president, G. Harold Powell, Los Angeles; general secretary, J. F. Nickerson, Chieago, and treasurer. Bruce Dodson, Kansas City.

One director and one alternate were elected from each constituent organization and five directors from the individual membership.

EXAMPLE OF INTENSIFIED EFFORT By C. W. Esmond

In these days when the Gospel of Work and Intensified Effort is being preached to counteract depression, examples like this one of F. W. Springer, proprietor of the Missouri Valley Creamery, of Washington, Mo., provide abundant inspiration.

Washington is a town of about 4000 people. To it came Mr. Springer, eight years ago, with ten dollars in his pocket. He started in the creamery business with a hand churn, securing a little cream from each of a few scattered farmers. The rest of the story is one of steady, intelligent work and gradual, but sure success.

Today the business is housed in a plant that would do credit to a city four or five times the size of Washington, including in the equipment two modern 40-quart brine freeers, two capacious hardening rooms and other equipment in keeping. The busines is today incorporated on a conservative basis; for \$20,000.

The population of the town being small, one naturally expects to find a considerable area of shipping territory to account for a plant like this. But here, too, the field is restricted, as one will see on looking at a railway map of Missouri. The Washington territory is very limited.

As always, in unusual cases of this kind, the explanation appears to lie in the man himself. In his
office you find, in addition to trade publications such
as The Ice Cream Trade Journal, such magazines as
System. His office book-case is filled, not only with
books pertaining to creamery and ice cream matters, but it also contains complete sets of standard
books on modern business and the bound lessons of
the Alexander Hamilton Institute. Mr. Springer appears to have an insatiable appetite for ideas, methods
and principles that he can use to make his business
grow. From what he has already done it is of
course clear that while he is a student, he is no
impractical dreamer or one who fails to apply good
ideas with skill and hard work.

His hobby is the intensive cultivation of the limited territory in which he operates. "More ice cream used per consumer; more ice cream sold per dealer" are his watchwords and he takes the most direct means of setting them realized.

"If we don't push our product, our dealers won't is his idea. He reaches the consumers directly and follows them up continuously. He visits his dealers regularly and frequently, keeps them enthused on the handling of ice cream and sees to it that his advertising material is effectively used in the stores instead of being relegated to the ash can. He carefully studies the best ways and means of doing his promotion work and then invests his money judiciously, in educating consumers and dealers to the amount of over \$100 per month. Though perhaps large for a territory represented chiefly by a town of 4000 people, this expenditure is exceptionally resultful because linked with study and hard work.

Mr. Springer is a modest man, but such lights as his should be uncovered when possible for the ideas and inspiration they give to others.

REFRIGERATION FOR ICE CREAM PLANTS

A Discussion of the Installation and Operation of Refrigerating Equipment In a Medium Sized Factory

By J. G. Hammerschlag District Manager, Westerlin and Campbell Co., Milwaukee, Wis. From an address delivered at the annual convention of the Wisconsin Association of Ice Cream Manufacturers

The first subject that I would particularly like to discuss is the size of the plant necessary for a given gallons per day production. We figure that a one ton plant will make and harden 100 gallons of ice cream per day when operated continuously for 24 hours. The proportion can be carried on up to and including plants making from 3000 to 4000 gallons per day, and larger. I believe there are but one or two ice cream factories in Wisconsin, whose capacity is as great as this, and, therefore, my figures will apply to nearly every plant that is at present in operation, or is in contemplation. If, therefore, we take as an example a 1000 gallon per day plant to figure on, we say that this will take a 10-ton machine, operating 24 hours per day to freeze and harden that amount. or if the machine is to run only 12 hours per day, in which time that amount of cream must be frozen and hardened, a 20-ton machine is required. This tonnage is based on a back pressure of 20 lbs. and a head pressure of 175 lbs.

Having determined the size of the machine, the power necessary to operate, expressed in horse power, is from 11/2 to 2 times the tonnage, depending upon the size of the equipment and the method of drive.

Now a word as to the proportion of low side or piping. Refrigerating plants, as you probably know, consist of the compressors, the compression, or high pressure side consisting of condenser, receiver, oil trap, and connections, and the cooling pipe, either exposed or submerged in brine, and the best laid out plant is one in which the proportion of high pressure side and low pressure side is evenly balanced. No two ice cream factories operate exactly alike, nor do we know of any that handle their raw and finished product exactly the same as does their neighbor, and all conditions of manufacture must be taken into account in figuring up the proper proportion of piping and its equal distribution for the amount of work that it must take care of,

We figure 200 lineal feet of 11/4-inch pipe must be submerged in the brine tank for each 40-qt. freezer. Freezers of larger capacity, of course, need proportionately more. If for example the maximum capacity of a plant is figured at 1,000 gallons of ice cream a day, and the entire work of freezing and hardening must be done in 12 hours, and there are four 40-ot. freezers in the plant, we would figure a 20-ton plant and 800 ft. of 11/4-inch pipe in the tank. If, on the other hand, the mix is to be pasteurized and additional heat must be taken from this mix by the brine agency, more pipe must be placed in the tank to compensate for this additional duty. Right here is where so many of our customers insist on adding a great deal of duty to the refrigerating machine, which really does not belong there. Instead of pre-cooling the pasteurized mix by means of water, they use the brine entirely, returning this very warm brine to the brine tank, and often they complain of having difficulty in getting their brine cold enough for proper freezing. Obviously the correct thing to do, would be to precool this warm mix with water, down to say a temperature of 75 to 80 deg., and then let the brine carry the temperature of the mix to a point just above freezing and where it can be held at that tempera-

ture during the aging period.

Now, having determined the number of feet of pipe in the brine tank, we must next determine the size and capacity of our hardening rooms. It has become almost universal practice to have a hardening room capacity of from 21/2 to 3 times the daily capacity of the plant. It is likewise found to be good practice to have at least two hardening rooms, and use the same for fresh cream on alternate days, so that the pipe may have a chance to operate for 24 hours on each batch before it is removed for shipment. Our standard hardening rooms are 8 ft. 3 inches wide and 8 ft. 9 inches high inside of insulation, and of a length to be determined by either the capacity desired for storage or in some extreme cases by the space available. The hardening room piping is usually arranged in shelf form, the shelves extending along two walls, with an aisle between. The first row of piping, 8 pipes wide, is 28 inches from the floor. The second and third rows are usually spaced equally distant, although these dimensions may be changed to suit height available or cans other than 5-gallon size, and above the third pipe there are two shelves spaced 6 inches apart and above these two, another row of pipe extending completely across the room. In addition to this, there is a row of pipes parallel to each wall, so that the cream placed on the shelves is entirely surrounded except on the front side by an envelope of piping. When pipes are spaced at 4 inch centers, there will be an aisle between shelves about 2 ft. 9 inches wide.

Our standard hardening room contains 132 lengths of pipe. The pipe is usually one foot shorter than the inside dimensions of the room to allow for making pipe connections. This number of feet of pipe gives a proportion of practically one lineal foot of 11/4-inch pipe for every % cu. ft. capacity of the room. Our contention is, and always, has been, that the more pipe you can crowd into the room, the better your hardening room will perform. We have seen many instances where the row of pipes parallel to the length of the room and adjacent to the wall has been omitted. We have invariably found that in such cases it is necessary to run the refrigerating machine longer hours to get the same effect as with a room that is equipped with a full amount, or it is necessary to run with a lower back pressure in

order to get this same effect, and consequently cut down the capacity of the machine.

In figuring up the capacity of a hardening room equipped as described above, we find that without taking into account the storage capacity of the two top shelves, which are usually used for brick tins, that a lineal foot of the three shelves spaced 28 inches apart, when piled full, after the cream has been frozen and properly stacked, will hold 75 gallons in 5-gallon cans and therefore two sides will store 150 gallons per lineal foot of room length, A room to hold 1,000 gallous of bulk cream, stored in 5-gallon cans, need not be over 71/2 ft. in the inside. In addition to the storage for 5-gallon cans on the shelves, there is a considerable space available in the aisle, which may be filled up on peak-load days, such as Fourth of July and other festive occasions. Also, in addition to the bulk cream in 5-gallon cans, the two top shelves afford storage for 5 gallons per running foot of brick on each side, or for the two sides, 10 gallons per foot. If more brick storage is desired, it is, of course, perfectly feasible to space the shelves in such manner that 4, 5, or even 6 brick compartments may be provided.

Returning then to our original plant of 1,000 gallous per day with 4 freezers, operating 12 hours per day, we have our 20-ton machine with 800 ft. of pipe in the tank, and if we then want to provide storage for 3,000 gallons of cream, we need hardening rooms whose total combined length, if of standard construction, must be from 22 to 24 ft., and if we divide this into two rooms, we should provide ourselves with two hardening rooms 8 ft. 3 inches wide, 8 ft. 9 inches high, and 12 ft. long in the ckar. Such hardening rooms will each have 1,452 ft. of 1¼-inch nine.

Will you please bear in mind that in the plant that I have been describing heretofore, I have been basing my deductions and figures on one that is equipped with a single refrigerating machine. Most of you who have refrigerating machines in your plant, and a great many of you who have at times figured on installing one, but have as yet not gotten up sufficient courage, will know that in order to reach and maintain the extremely low temperatures desired for the hardening room, it is necessary that the refrigerating machine be operated at a low back pressure. To those of you who may not be familiar with this phrase, by back pressure we mean the pressure in the ammonia coils before the gas is returned back to the compressor. The lower the pressure the more rare or light in weight will be the gas, and consequently colder in temperature. Ordinarily to reach a temperature of say 10 deg, below zero, it is necessary to operate your refrigerating plant at a back or suction pressure of somewhere between 3 and 6 lbs. If you will remember, 1 described the tonnage of our refrigerating plant on which we are basing our example, as being based on 20 lbs. suction pressure. At 20 lbs. suction pressure. the temperature of the ammonia is about 5 deg, above zero. At 15.67 lbs, suction pressure, the temperature of the ammonia is exactly zero. Now, if we carry an extremely low back pressure, say about 5 lbs., our expansion valve will be opened but a very slight amount and the amount of ammonia liquid passing through the expansion valve and into the coils will be very greatly reduced from the amount that would be carried through if the expansion valve were open wide enough to allow of a 20 lbs, pressure being carried in the coils. In other words, by virtue of the very light and rare gas carried in the coils, the capacity of our refrigerating machine is considerably reduced. It may be a surprise to you to know that this reduction is very close to 50 per cent, of the total machine capacity compared with that at 20 lbs, suction pressure.

In spite of the fact that this loss of toppage is known and recognized by the operator, we find in a great majority of the cases, that the refrigerating plant is run throughout the entire period of daily operation at a 5-lb. back pressure. Operators have found that the plant does not work out well and cannot be so conveniently handled if they run it at different periods under wide ranges of temperature. Obviously it is not necessary that the brine be carried at as low a temperature as the hardening rooms. Some have tried to operate their machines at high back pressure on the brine without closing off the expansion valves in their hardening rooms. This is, of course, a mistake. Even if the expansion valves are only open a very small amount in the hardening rooms, the pressure will be equalized throughout the pipe system, and the hardening rooms will become warm. If on the other hand, the expansion valves to the hardening rooms are tightly closed until the work of freezing has been finished, it will result in the cream being soft and many additional hours of operation will be required to again bring it to the desired hardness

What then is the remedy? In our opinion it is in having two machines, one of which may be operated at all times on the hardening rooms and other room coils, and the other exclusively on the brine. Of course we do not advocate placing two machines in every factory immediately upon starting of the business. We believe rather that one machine will do for a considerable time, until the capacity for which the plant was intended is reached or exceeded. It stands to reason that a man building a plant for 1.000 gallon capacity per day, probably does not expect to reach that maximum amount for several years after his factory is started. However, he equips himself with a refrigerating machine large enough to take care of this 1,000 gallon capacity, and even if he operates the same at a low back pressure, his capacity at first is sufficient to take care of his needs. He can, of course, always run longer hours than our example of 12 hours daily operation calls for, and in most cases when he reaches the expected maximum capacity, it is necessary for him to do so. In fact, during the extreme hot summer days, we usually find him operating on his hardening rooms until late into the night.

Let us assume that this man has reached his ultimate capacity, that he wants to install additional freezers, increase his hardening room capacity and enlarge his plant. Obviously, if he installs additional freezers, he will have to install additional brinecooling capacity. When he needs additional brinecapacity, we install a double pipe brine cooler, and we pre-cool the brine returning from the freezers and from his pasteurizing outfit in the double pipe cooler before it goes back into the tank.

Let us say then the man adds another machine. Of what size should this be? Say he wishes to increase his business to 2,000 gallous per day capacity. If he increases to 2,000 gallons per day capacity and still operates but 12 hours a day on his freezers, he would have to install at least eight 40-qt, freezers, and if we figured on our original scale that each freezer would take 200 ft. of submerged pipe, it would require the equivalent of 1,600 ft. of pipe. We take it for granted that when a man's plant grows as large as this, that he will be forced to pasteurize his mix and undoubtedly will use some sort of an emulsifying machine. At a conservative estimate, the additional cooling required for taking care of this added pasteurizing duty, will require at least the equivalent of 400 additional feet of pipe in the tank. I may have neglected to tell you that our pipe tonnage for submerged piping is figured on the basis of 150 lineal feet of 11/4-inch pipe per ton. If therefore we already had 800 ft. of pipe in the tank, and by doubling the capacity we would require the equivalent of an additional 800 ft. to which we would add another 400 ft. for pasteurizing duty, we should have an amount equal to 2,000 ft, of submerged pipe, which would equal a refrigerating capacity of 133/3 tons. To play safe, and to provide for extreme days, let us say that 15 tons will be required for this freezing duty. We therefore would be safe in adding a 15-ton machine to the plant and for additional brine cooling apparatus, we would add a brine cooler which would be large enough to make up for the difference between the 15 tons required, and the equivalent tonnage of the 800 lineal feet of pipe already in the tank, which has a capacity of about 53/4 tons, or in other words, it would be necessary for us to add about a 10-ton brine cooler. We figure a brine cooler made of 2-inch and 3-inch pipe must have from 12 to 14 lineal feet, depending upon the total tonnage and upon the amount of brine forced through it for each ton capacity, and the number of pipes high for our cooler is then determined by the space and length available. A standard unit cannot be made over 18 ft. long. You may ask me now, why not a brine cooler originally instead of the pipe in the tank? I will answer that in a plant having but one machine, and where the operation of the plant is carried on with a low back pressure, that in nine cases out of ten, sometime during the season, if not oftener than once, at least once, through careless operation in allowing the bring to become weak, or for some other cause, this brine cooler will freeze solid, and if it does not rupture, it will delay the operation of the plant for hours until it can be thawed out. On the other hand, where there are two machines, and one machine is working on the brine only, the high back pressure carried on this machine and the consequent comparatively high temperature of the ammonia would to a very great extent make the possibility of a freeze-up so remote as to be negligible. You realize, of course, that in an ice cream factory you do not need a great volume of brine in the brine tank. What you do need is brine at a constant temperature. In consequence of not needing such a great volume of brine, your brine tank need not be very large. It should be sufficiently large to comfortably house the number of feet of pipe that is necessary to be installed therein, and without crowding, and so that plenty of room is left for connections and for inspection of joints. The addition of a double pipe brine cooler does not require any additional brine tank capacity.

What then shall we do with the 20-ton machine we already have in our 1,000 gallon plant? Obviously, when we increase the capacity of our plant to 2,000 gallons a day, we will have to increase our hardening room capacity proportionately, and this 20-ton machine, operated at 5 lbs. back pressure, will very readily take care of hardening rooms, with a combined total capacity of from 6,000 to 8,000 gallons, with enough reserve to cool a raw products room and an ice storage refrigerator.

I probably should have told you earlier in my story that we think the proper place for the brine tank is in the ice storage room. Many of you buy ice that you pay from \$3 to \$5, or even \$6 a ton for, have it delivered to you in large quantities, and after delivery you either let it lay out in the open, or put it under some kind of a shelter, sometimes directly under the rays of the sun, where it melts away to 50 per cent, of its original size before you use it. Hardly without any additional expense, other than providing an insulated room, you can keep your ice storage at a temperature below freezing by installing the brine tank there. Perhaps you would need a few additional feet of pipe, but the original expense would be as nothing compared to the saving. In most of our plants, where we have had the opportunity of offering suggestions before the final plans were completed, the brine tanks are situated in the ice storage room.

We now have a plant equipped with a 15-ton compressor and a 20-ton compressor. Perhaps your attention has not before been called to the fact that when you have two similar machines, but of unequal sizes, you have three capacities available. You have either a 15-ton machine, or a 20-ton machine, or a 35-ton combined capacity, depending upon whether you operate the smaller, the larger, or the two machines together, and need we tell you that such a range of capacity is desirable in an enterprise such as yours, where your business varies during seasons from almost nothing to full capacity, and in a period sometimes not over 3 or 4 months apart? What a wide choice you have in operating your plant. During the dull season obviously a 15ton machine will take care of all your work. As the season becomes a little more advanced, you put on your 20-ton and then you go to your 35 during July and August. You understand, of course, that the machines must be cross-connected in order to do this. By cross-connected we mean they must be so valved that either machine, or both machines, may operate on either brine or hardening room duty, or on both at the same time.

There is but one fixture that I have not yet described, and that is the brine pump. Obviously this

brine pump must be of a capacity large enough to take care simultaneously of all the equipment requiring brine. It should be practically noiseless and of a type that is as near perfect in operation as is possible. In my opinion nothing has been devised that so closely approximates this condition as the direct connected centrifugal type of pump. We figure that a ton of refrigeration will require 5 gallons of brine per minute under the normal operating conditions of an ice cream factory, and the capacity of the brine pump can be very readily figured from the data that I have given as to the total brine capacity necessary for our model plant. Preferably, you should have two brine pumps. Your entire operation is dependent upon this small piece of apparatus, and if you have two pumps, cross connected, you are playing the game safe.

I come now to the subject which probably will be of considerable interest to most of you. This subject is the manufacture of your own ice. Undoubtedly you have noticed and probably have inwardly commented on the fact that my model plant has been figured on a 12 hour operation basis. Perhaps you did not know that I had up my sleeve the manufacture of your own ice, and that I expected the other 12 hours in the day might be profitably taken up in operating your refrigerating plants on this duty. Do not misunderstand me, and I do not wish to convey to you that every small-sized ice cream factory of 500 or 600 gallons of cream per day capacity, should put in its own ice making unit, but I do say that when you have a plant of 1,000 gallons per day capacity, and this capacity is maintained for a reasonable length of time during the summer months, that you cannot afford to pay \$3.50 to \$4 a ton for your ice. We can beat that cost all hollow, even if you pay as much as 3 cents a kilowatt for your electric power. We dare say that a plant making 1,000 gallons of ice cream per day, will for its own use average from four to five tons of ice for packing purposes. The average 5-gallon container will hold 40 lbs. of ice. If you have 1,000 gallons capacity a day, and ship out that amount on the average, you will require four tons for packing, without allowing anything for waste. I am of the opinion that the average ice cream factory that ships out 1,000 gallons of cream per day, will use as high as 8 to 10 tons of ice per day during the summer. I will leave it to you whether my figures are correct or not. If you have your own ice making plant, and figure the same on a basis of from 10 to 15 tons capacity, you need not draw from your ice tank at any time more than you need, except that you would keep your ice storage full enough to take care of any unusual demands. Even by placing your ice in your ice storage, you would, of course lose nothing, as the same could be readily kept below a freezing temperature.

As far as night operation is concerned, you can easily make 10 tons of ice or more with your combined 35 tons refrigerating capacity when operating during the 12 hours of the night, but of course, you would not operate on the ice tank only at night. Your plant would be arranged so that some part of

your refrigerating duty would be converted to your ice tank at all times, but at night when the rest of your plant is shut down, the greater part of all your capacity would be converted to this purpose. You do not need a highly expert attendant to operate your machine during the night. Most of you, I am sure, could profitably find employment for a man of average intelligence in your plant during the night, who could take care of such work as could not readily be done in the daytime without interfering with your regular routine. There is no question but that such a man could take care of your cleaning, the oiling and greasing of your cars, fill up your salt bins, and attend to a hundred other kindred duties. While he was doing this, he could at the same time watch the operation of the refrigerating plant. He would really have nothing to do except to see that the machines were getting their proper oil, that the bearings were cool, that the high and low pressure gauge pointers were in their correct position. He has nothing to do with the freezing of the ice-that takes care of itself.

We believe that if you look into the question of manufacturing your own ice, and consult with those who have installed their own ice plants, and who we feel sure will be very glad to tell you of their experiences, that you will be convinced that such a unit will be the most profitable part of your refrigerating equipment. Of course, you will say that it costs a lot of money to install such an outfit. That is true, but it also costs a lot of money to pay for 1,000 to 2,000, or even 3,000 tons of ice per year, and after you have the ice all paid for, and it is all melted away, possibly all you have left is the receipts of your payments to the ice man, but when you have a plant, and you have the cost of your ice charged off, you still have your plant left, and the modern business man who conducts his business and each year figures a stated amount of depreciation, will find that in the course of ten years he will have his ice plant charged off, and from that point on his real profits will begin to show up. When I told you a short time ago that we could beat the \$3.50 a ton natural ice all hollow. I meant of course, that to the power cost of making the artificial kind, would be added interest on investment, depreciation, operating expense and repairs, and which altogether would be considerably lower than the \$3.50 figure for the natural product.

Before I close, I would like to call the attention of prospective builders of new plants, that it would be decidedly to their advantage before the final plans of their building are drawn up, to call into consultation and confer with the refrigeration engineer of the company with whom you intend to place your business, or if you cannot at that time make a choice, call in the representatives of a number from whom this choice undoubtedly can be made. The refrigerating equipment of your plant is probably the most expensive part of your equipment. Its proper location, its proportion, and the size of the various refrigerated rooms are some things that you will not be able to get from any architect who has not made a specialty of this class of work. We regret very much that in our state we have but a very few

who are competent to undertake the laying out of a plant manufacturing dairy products. Do not first have your building designed, all your apparatus located, and then figure that you can put the refrigerating plant in some corner, or any old place to get it out of the way, when by proper consultation and co-operation you might be able to save hundreds. If not thousands of dollars, on your original investment. The experienced refrigerating engineer of today is an expert in his line. He knows all about insulation, a great deal about building, and probably has seen and inspected more plants in a year than the average architect will see in a lifetime. His experience and advice is yours for the asking, and you should take advantage of it.

If you would ask me then to describe to you my dieal refrigerator plant for a modern ice cream factory, I would say, provide yourselves with two vertical enclosed twin cylinder safety head machines of moderate speed. This type is manufactured by most of the reputable concerns who are today soliciting your patronage. I would have these machines of different capacities, and so cross connected that they could be made to operate on either the coil or the brine system or on both at one time. When you have two machines, you play safe from the standpoint of break-down. Irrespective of any device

that may be installed on a compressor that would make it possible to operate a single unit on both high and low pressure, there is nothing in the world that will make you more secure in your refrigeration than a double unit, and nothing that will be cheaper to oberate.

I would provide myself with a brine tank filled with coils and an auxiliary brine cooling system in the shape of a double pipe brine cooler. I would have the brine tank and cooler in the ice storage room, and I would have this ice storage room so arranged with respect to my shipping room that ice could be handled direct from the ice storage to the crusher and from there to the shipping room. I would have an ice tank large enough to take care of my average summer business, and in figuring my ice storage, I would make it large enough to conveniently store enough ice to more than take care of my peak-day loads. I would have enough hardening room space for three times my daily maximum freezing capacity. I would have my raw products room large enough to store a considerable amount of products other than the daily amount necessary for my mix. I would have two centrifugal brine pumps, direct connected to motors, and each large enough to take care of the maximum amount of brine necessary for my freezing operation.

WISCONSIN MANUFACTURER MAKES SUGGESTIONS

New-comer to Industry Advocates National Association Carry-on Cooperative and Educational Ice Cream Advertising Campaign

> By Karl B. Mory Vice-President, Mory Ice Cream Co., Appleton, Wis. From an address delivered at the Annual Convention of the Wisconsin Association of Ice Cream Manufacturers

I have been asked to say a few words about the first impressions of beginners in the ice cream industry.

Most of you know that this is our first season in the ice cream business and this places us in a position to view its various activities in probably a little different light than you, who have been in the business a number of years. And the one thing that we think stands out head and shoulders above all other questions is a lack of proper organization among the ice cream manufacturers of the state of Wisconsin.

By this I do not mean to cast reflections on our present organization. It's a fine thing, but it doesn't go far enough. We get together only once a year and after a fine time for two days we all go home and do not see each other for another year. If you stop to realize gentlemen, we are just about the most poorly organized industry in the state. And there is no excuse for it. Wisconsin isn't so large that we can't all get together once a month and talk business conditions over in an intelligent manner, instead of groping around in the dark the way we are now doing. Why even the butter makers meet once a month and, are you going to be forced to take your hat off to them as a more intelligent body of business

men than yourselves? But that is just exactly what you will have to do.

I even know of one instance where the heads of two competing firms in a city not over 30,000 population did not even know each other and they had been engaged in business there three years. Do you suppose that conditions like these promote the welfare of the ice cream industry? They most certainly do not.

Take our own business for example. As malsters and grain dealers we belong to the National Association and also to the State Association. The National Association maintained an office in Chicago under a very brilliant lawyer and we had a meeting there every month, and these meetings were attended by about 99 per cent, of all the malsters east of the Rocky Mountains. Now do you suppose these men would go to all the expense and time to come from distances as far as New York if they weren't dead certain that they were benefitted by these meetings? And I might further say that our business was never better attended than when these meetings were faithfully attended. And on top of all this we had our Wisconsin Association which met here in Milwaukee once a month. Surely the ice cream manufacturers could arrange their affairs so that they might devote one day out of the month to bettering conditions of their own industry.

My suggestion would be to open a small office in Milwaukee. I believe Milwaukee would be the logical location for this office because it is more conveniently located for all of the manufacturers than any other city. The expense would be very small. All we would need would be one room under some capable man. We wouldn't require the services of a high salaried attorney at this time. But what I want to see done is to get the manufacturers working together instead of everybody pulling in a different direction.

With an organization such as I have outlined innumerable things could be accomplished. A credit bureau could be established, the cabinet question could be thrashed out and settled and I might say right here that I honestly believe that within the next year or so you will see this practice abolished. The brewers were up against the same thing. When money was rolling in like water they thought nothing of setting a man up in business and giving him all his fixtures, but when competition became keener and dividends smaller they cut it out might quick. And another thing this office could do would be to help owrk out the tub rolblem.

This tub problem is no doubt a time worn subject with you. But nothing really seems to have been accomplished to make this service any better than it was five or six years ago. Take our own example for instance. We had efficiency experts install in our plant what is considered one of the best tub record systems, but it doesn't work out entirely suecessfully.

Once a week our file elerk runs through the records and mails out cards requesting the dealer to return the tubs which we have charged to him. The dealer probably replies that he has sent the tub back, here we never received it. We earn teall this man a liar and tell him that he has got the tub, because may be he has sent it back and it is probably lying back of the depot or some where else and for the efficiency of our system we lose a dealer.

I have heard some people suggest a deposit on every tub but I do not believe this would work out entirely satisfactory unless every ice cream dealer in the state did it and they all will not do it. The brewers were up against this proposition at one time and they over came it by all charging a deposit on kegs and cases, but there are fewer breweries than ice cream factories and that helped them put it across.

Take our own business for example. At one time we never charged for the sacks we slipped our malt in, and as we were selling well over a million bushels a year we kept the bag factories running nights supplying the demand for sacks. Then the malsters woke up and charged the sacks up to the brewers and the trouble was over. But as I said before, unless this is unanimous it never would work out on ice cream tubs.

Most all of you have salesmen out on the road with instructions to send back all of your tubs he sees lying around. But your salesman gets his salary for the business he sends in and not on the empties he finds, so do you imagine for one minute that he is going to run the risk of losing a customer by calling him down for not cleaning his cans and returning them promptly. I should say not.

My suggestion in this matter is for our association to hire a man six months during the rush season. Give him a Ford and let him do nothing but travel around the state and chase back empties. Keeping in touch at all times with our office at Milwaukee.

And I would go a step further. The State law clearly defines that all cans shall be cleaned and returned 72 hours after being empty. State Dairy Commisioner George J. Weigle has always shown himself to be very much interested in bettering conditions of the ice cream industry, and we could assist him very much by getting after the dealers ourselves. He could deputize our man without pay from the state, which would give him the necessary authority to wake up a few of the dealers. I feel sure Mr. Weigle would be more than glad to co-operate with us and would probably pick us out a very capable man.

I have figured out the cost of putting this man on the road and it would be approximately \$400 a month. \$200 salary and \$200 month expenses, to include all motor upkeep. The last list of state manufacturers showed a membership of 40, which would be \$10 apiece per month. Not even the cost of two packers lying around somewhere. Isn't it worth that much to you gentlemen to know that someone is out chasing up your empties all of the time? Two men would be much more effective and that would only cost us \$20 apiece. Or if you should prefer to pro-rate the expense, pay it the same as you do your dues in the National Association, according to gallonage.

There is just one other thing in which we are not upter up to the minute, and I refer to the National Association of Ice Cream Manufacturers rather than ourselves, and that is cooperative and educational advertising—the same as the California fruit growers are doing for the can manufacturers. Also I have noticed that the coffee merchants of the United States have also recently joined this ever widening circle, with the slogan "Coffee—the Universal Drink." Why not "Ice Cream the National Dish?"

The Wisconsin State Association should go strongly on record endorsing a move of this nature and take it up with the National Association at once.

I trust, gentlemen, that I have not taken up too much of your valuable time, but I do hope that before yon return home you will make arrangements to meet here once every month.

CHAMBER WILL MEET

The ninth annual meeting of the Chamber of Commerce of the United States will be held at Atlantic City, April 27 to 29.

ADVERTISING ICE CREAM

Californian Gives His Views On Co-operative Advertising

By K. L. Carver

Sales Manager, Creacent Creamery Co., Los Angeles, Calif. From an address delivered at the annual convention of Calif. and Southwestern States Ice Cream Mirs.' Assn.

Periodically the proposition of group advertising designed to increase the consumption per capita of ice cream comes up for discussion. In most cases I believe these proposed advertising campaigns originate in the milido of clever advertising solicitors or agencies who have visions of a little "casy moue," and who are not unmindful of the fact that such campaigns must necessarily be handled by an advertising agency, for the principals usually have neither the time nor aptitude for planning and executing the details; furthermore, there is always present the feeling that such campaigns should be handled by a disinterested and impartial party.

In their zeal to land a good account, the agencies usually follow the lines of least resistance and merely build their campaigns around a single idea such as "Eat more ice cream," and overlook the fundamental principle of all effective cooperative advertising, namely, that the product should be trademarked and put on the market under a single trade name and be of a single uniform standard of quality. This lack of coordination to my mind would be the pitfall of such a campaign in the ice cream industry, and I do not believe that there exists a group of manufacturers in any city nor in any state association as a whole, who have developed sufficient confidence in each other or a close enough working relation, to throw aside their own trade marks or trade names for a common trade name and combine the good qualities of all their ice creams and then pool their advertising appropriations. This must be done, if we ever expect to accomplish great results in developing the consumption of ice cream, through cooperative advertising.

The combining of the various ice cream concerns in Portland into the single Weatherly plant is the nearest approach to such an organization that I know of. However, they have combined for the economies of manufacturing and distribution rather than with an idea toward a more economical and effective advertising and sales promoting campaign, as I understand each of the various companies within this organization continue to exploit their own respective brands and trade names.

Farmers as a rule are considered poor business men, but farm products popularized by associations of farmers have been the predominant group in successful cooperative advertising. Take for instance these notable examples: Sunkist oranges, Hood River apples, Sunsweet prunes, Sunmaid raisins. Tillamook cheese—and many others too numerous to mention. Can you imagine that the wonderfully successful campaign built up by the California Fruit Growers' Exchange around Sunkist oranges would have been half as effective if there had been Sunkist,

Moonkist and Starkist brands of oranges all competing with each other in the same field?

The scheme of sending samples of our respective ice creams to our State Convention meetings for judging, which we are experimenting with this year, would be a step in the direction of a fuller cooperation, if we would at the same time submit our freezing formulas along with our samples. If this is ver put into active practice it may bring about a standardization and coordination within the industry that might permit of cooperative advertissing.

I am giving my views on cooperative advertising merely to show you the fallacy of pooling a sum of money for a combined campaign on ice creams, as so often suggested. We will have to go a lot further than the mere raising of a "sum of money to spend." which, in itself, is near to impossible because of the usual diversity of opinion as to how such moneys should be expended. Furthermore, I can not conscientiously say that I would want to go so far as to work under a common trade name and put out a single uniform quality of ice cream made from a standard formula. I fear that a good many of us have just a grain of selfishness in our make-up, and are apt to think that we have the ability to make a better product than the other fellow, so we are somewhat loath to reveal all of our trade secrets to our competitors.

In order to properly direct your general advertising efforts, have you ever stopped to analyze ice cream merchandising in the following manner? Of all the ice cream consumed, perhaps 60 per cent. is dispensed over the soda fountain. If good syrups are used, if the nuts are nice and fresh, if a dash of whipped cream or a cherry is added, if a choice piece of pie is used for pie-à-la-mode, if the glassware and silverware are clean and shiny, and if the fountain is neatly arranged and well kept, do you really pay much attention to the brand or the quality of the ice cream that is served you? When you ask for a sandwich, do you specify "Wholesome Bread" or "Butterkrust Bread"-No!-you want sweet, tender ham, a bit of mustard, a crisp lettuce leaf and a couple of olivesyou should worry about the kind of bread. I am not preaching against maintaining the highest possible quality in ice cream. I am merely giving you "cold facts" from the public viewpoint. In other words, "quality" advertising alone, accomplishes but very little with this 60 per cent. of our consuming trade. Of the remaining 40 per cent. of our output, I venture that three-fourths of it is sold to the ultimate consumer by the dealer either because his store is the "nearest store"; because his is the so-called "best store" in the neighborhood; because his store or stand is the one regularly patronized by the customer: or because there is a personal friendship between the proprietor and the customer. This leaves but a bare 10 per cent. or so of our output that may find its way to a consumer who is influenced by advertising, into seeking Sanitary Ice Cream, Christopher's Ice Cream, National Ice Cream, or whatever his favortic brand may be. Rather discouraging from an advertising viewonit. Sin't it?

With this in mind our firm is endeavoring to simplify its advertising by focusing it upon dealers rather than by directing it largely at the consuming public. If we can build up our prestige so that prospective dealers will seek our particular brand of ice cream, they will take care of its sale to the consumer, as their success depends to a great extent upon the volume of ice cream they turn over. Perhaps the best way to develop this prestige is through brief, clean-cut and continued repetition of impressions. The idea of repetition is sound from the "trade getting" point of view, for a dealer is much more susceptible to sales arguments if he knows that he is being offered a widely advertised brand. I have often heard a prospective dealer state that he much preferred to handle an advertised ice cream. It is well, of course, to work as much of the quality idea as possible into repetition advertising, by neatness of arrangement, selection of colors, and the like, rather than by discoursing at length on quality itself, which in the present day of so much flowery advertising, is apt to be taken with a "grain of salt." Also a good deal of the "punch" will be lost if the attention is distracted by much copy. The thing of primary importance is to adopt a simple, distinctive and characteristic trade mark or trade name, and then stick to it. Display it wherever possible, and work it appropriately into all of your advertising, but do not keep on experimenting with it or changing it from time to time. If dealers continually see the mere trade mark and name of a particular brand of ice cream displayed on walls, on store fronts, on bill boards, on road signs along the boulevards, or on sidewalk signs in front of stores, in whatever direction they go, they soon consider this brand of ice cream as a standard article which is popular in the mind of the public. If its real quality is kept up to a point beyond reproach, then dealers, and the public as well, will surely come to look upon it with favor.

I might say here that there are two firms in the South who are unintentional exponents of this idea of repetition of impressions. In terms of numbers of impressions made, each firm is benefited by the advertising campaigns of the other, but there is a confusion of impressions which may be detrimental from a purely advertising point of view. The product of one plant is sold under the proprietor's name while that of the other is sold under a coincide trade name; nevertheless, the public mind is confused, so that we often hear the two spoken of as applying to the same brand of ice cream. This is no doubt due to the fact that both firms use a good deal of red color in advertising their trade, names, and that the names are of about the same length and are similarly spelled.

We have obtained very gratifying results during the past year from the use of painted wall displays. We maintain our own sign painting crew in the field and our sales force secure the locations for us. Often locations can be secured free of charge merely for the protection afforded the surfaces by the painting. Some are secured for the painting of privilege signs, and others are secured through the payment of a regular yearly rental, which in most cases is very nominal. During the past year we have maintained 316 signs in and about Los Angeles at a total cost of a little less than \$10,000, including rentals, labor, materials and up-keep of the machine used by the crew. If this same campaign had been placed with the outdoor advertising or billboard companies, it would have cost us at least twice this amount.

Another policy which we have held to very religiously is the development of our own designs for indoor display signs. By using the oil-paint process of stencil work, a very wide range of effects can be produced at a cost about equal to that of the so-called lithograph signs sold by the eastern lithographers, and we can have the decided advantage of giving our own personal touch and ideas to the signs, at the same time getting our trade mark or trade name into the signs in a way so that it predominates, thereby strengthening again the idea of "repetition." Much of the syndicated work is designed and prepared so as to captivate the advertising manager's fancy at first sight, without so much thought being given to their true advertising value. I have found that such signs often prove quite disappointing after the novelty of the first impression has worn off. The picture of a stunning girl is fine in its place; a pretty picture may be pleasing to the eye and have appetite appeal, but it usually will sell the sign rather than sell one's own particular brand of ice cream.

In general I do not approve of large scale newspaper advertising. At present its cost is tremendously high and there are so many large department store spreads appearing that moderate sized displays are almost lost in the shuffle. If newspapers are used at all, they should be used with the same "reptition" idea in mind, cutting out most of the copy which so often looks good and sounds good to own gotism, but which few will actually read. Use a comparatively small space displaying your brand or trade mark as the main feature; use it consistently month in and month out, and as persons glance over their morning or evening papers your trade mark or trade name will soon become subconsciously imprinted upon their gray matter.

A type of advertising that I do believe has a real place in the ice cream, as well as every other industry, is that of the institutional or good-will type, intended to fix in the minds of both dealers and the public the size of the concern, the character of its organization, the service it renders, and the high standard of quality it embodies in its product. Pamplitets, booklets, circular letters, newspapers and trade journals or publications, are, of course, the mediums for circulating this type of impressions.

Economic appeals such as "More servings per gallon," "larger profits," or "quicker turnover" can be nsed very effectively in so-called dealer advertising, if the manufacturer is mindful of the principle of "truth in advertising" and sees to it that his product actually conforms to all he claims for it.

I wish to say a word or two here about "destructive" advertising as against "constructive" advertising. A few days ago I listened to an illustrated lecture on milk. For comparative purposes several slides were thrown on the screen, showing a dilapidated and extremely filthy stable in which cows were being milked; a musty dark basement room used for washing bottles and cans; a man testing milk by drinking it from the inverted lids of the cans, and a rare collection of dirty milk bottles. Each of these views were immediately contrasted with the ideal conditions and operations in a model creamery plant. The idea was, of course, to portray vividly the superiority of carefully and properly handled milk, thus hoping to increase the output of the up-to-date plant, However, I am sure that the illustrations of the unsanitary conditions not only clouded the favorable impressions gained from the ideal conditions, but tended to create a marked prejudice against the use of milk. I know that I did not sip my glass of milk that evening for dinner, with my usual full measure of appreciation. If something cannot be said about a product that is "constructive" to the industry as a

whole, then it is better to say nothing at all. Illusion in advertising to adulterations, substitutions, or the possible use of inferior materials are distinctly "destructive" in effect and are dangerous to use. Even the use of the word "pure" is questionable. I will always remember John Knobbe's discussion of this point at the National Association's convention in Los Angeles in 1915, when he brought out most forceably the idea that the term "pure" ice cream altoproper simpure."

After all is said and done, it is mighty hard to trade the direct results or benefits of ice cream advertising. If a department store advertises a sale of a particular article in the newspaper, people flock to the store in response and at once there is a concrete basis for determining results, and such advertising becomes merely a proposition of what best to say in the various advertisements. With us in the ice cream business, the results of advertising are so intangible that at best our policies must be founded largely on theory and no doubt we all spend considerable money foolishly, in the endeavor to obtain the results that we all know do actually acrue from judicious and properly directed advertising.

PENNSYLVANIA DISTRICT MEETING

Central East Ass'n Meets at Pottsville to Discuss Cost of Ice and Salt for Packing

The Central East Ice Cream Association held a meeting on March 23 at Pottsville, Pa., at which the main topic for discussion was the subject of cost of salt and ice in packing cabinets and delivery systems led by Thomas Hall, Harrisburg. Mr. Hall presented the following paper on this subject:

Conforming with motion passed in the last meeting of our Association relative to salt and ite, I have made a considerable search for data pertaining to both ice and salt. I have found the best references in The Ict CREAM TRADE JORNAL of November 1919, pages 44-99 and G. December 1920, pages 48 and 49, and February 1921, page 52. It will be noted these articles are from extended investigations made by some of the largest manufacturers and reported at the National and state and other association meetings. In giving these figures, I am including information collected from the Philadelphia section, meetings. In giving these figures, I am including eneral information collected on the subject through conversation with various manufacturers in this section as well, and cannot, therefore, give definite references. Some of the data taken from articles specified above refer to data as being collected from forty plants.

From this data, together with other data which I have looked up, extremes in the quantity of ice used, show from 13 to 40 pounds of ice used per gallon of ice cream shipped. These extremes I do not consider it wise to take into account, for the reason that they are extreme and not normal cases. We appreciate the quantity of ice required differs somewhat in different cities and different localities, and depending upon whether or not it is tub delivery or iced-up service, also whether it is summer, with heavy out-put or winter with lesser out-put. The average, however, is shown to be from 18 to 26 re-

gardless of the varying conditions leaving out the very extreme as indicated above.

Salt seems to vary from extremes of 2 to 6 pounds per gallon of ice cream. Leaving out the extremes, or very exceptional cases it runs from about 2½ to 4.

272 to 4.

From the above we should say that a fair consumption of ice is about 22 pounds of ice per gallon of ice cream manufactured, this being a total amount of ice for all purposes as drawn from the ice tank including wastage. This assumes there is not over 50 per cent. iced up service.

We would conclude that 3 to 31/4 pounds of salt

We would conclude that 3 to 3½ pounds of salt would be a fair average per gallon of ice cream delivered. It surely does not seem to us this should exceed 3 pounds; that is of salt purchased per gallon of ice cream delivered.

Our own experience shows that the amount of ice per gallon of ice cream delivered, increases somewhat during the winter months, as does also the salt. This, of course, is due to lesser quantity of ice cream delivered during these months.

This question of salt and ice is a very important one. Salt for example, especially purchased in sacks, including transportation, truckage, delivery to consumer is worth about 0.1 per pound. We all know that some customers insist on entirely too much salt contact. This pounds for per gallon. We should watch such customers, find out what they do with it and correct the loss.

Supplementing the above a further investigation of the salt and ice question shows an average of 100 lbs. of crushed clean, unsalted ice fills a five-gallon tub and costs twenty-five cents delivered. (Ice at \$5.00 per ton including wastage and delivery.) The average weight of 5-gallon tubs with 5-gallon cream iced up is approximately 130 lbs., the tub alone

40 lbs., the cream and can with lid weighs about 371/2 lbs., the can 141/4 lbs. with lid, the ice and salt 521/2 lbs.

For tub delivery or express shipments about 5 lbs. of this is salt, costs 5 cents; and 471/3 lbs. ice, costs 12 cents, total 17 cents.

Approximate salt and ice cost per gal. 31/4 cents. This cost for salt is one cent per pound, including freight, bags, truckage, handling, delivery, and wastage. This figure of 334 cents is low if many high five tubs are used and in this case we would place the figure at 41/2 cents per gallon.

If we take an average of 22 lbs. of ice and 3 to 31/4 lbs. of salt per gallon of ice cream; cracked at \$5.00 per tub, and salt at one cent a pound, including all kinds of delivery, wastage, bags, truckage, freight, etc., we will have a basis of ice cost 5½ cents and salt 3½ cents. Approximate total salt and ice cost per gal. 834 cents.

For iced up service we figure it takes an average of nearly 33 lbs. of ice per gallon and cost 8½ cents; also, 4½ lbs. salt and cost 4½ cents, or a total of 123/4 cents.

This seems entirely too much. Nevertheless if you look it up carefully I believe you will find it is not far wrong. If you consider the price used for salt or ice is too high, you can cut down these figures correspondingly. We have put up a notice in our shipping department as follows:

"A shovelful of ice costs 31/2 cents. Don't waste it."

According to Geo. W. Brink, secretary of the Association, the next meeting will be held in Harrisburg at the Penn Harris Hotel, April 21. At this meeting it is planned to discuss a number of proposed systems of charging dealers for cabinet service.

AMERICANIZATION DICTIONARY

A handy pocket volume for persons engaged in Americanization work is a dictionary which defines naturalization terms and explains the processes whereby aliens may become citizens of the United States. Not until the average American looks over this list of four or five hundred definitions does he realize that his own knowledge of the subject is woefully inexact. Therefore, to be able to bring out the little booklet and answer clearly and authoritatively any question which an alien may put to him about naturalization is decidedly worth while for all who come in contact with the foreign born. This applies especially to superintendents, foremen and personnel directors, teachers in English and citizenship classes and "welfare" men.

The Americanization Dictionary was compiled by Frank L. Dykema, Executive Secretary of the Americanization Society of Grand Rapids, Michigan.

Stating the purpose of his valuable little work, the author says of the foreign born:

Men who have been misdirected, sent from one office to another, feeling the necessity and desirability of citizenship without being able to overcome the apparent difficulties in connection with the pro-cess of naturalization, become unhappy and disturbed and add to the all too prevalent unrest. They may even become antagonistic to the Government because of its apparent inefficiency, and in such a state of mind become prospects for the radical organizers,

DOING BUSINESS WITHOUT MONEY

More than nine-tenths of our business is done without the use of till-money. We effect our enormous exchanges of commodities and services principally with bank checks, and less than one dollar in every ten is a banknote or "hard" money. In America this method has been developed much farther than in any other country. But even that is not enough to satisfy a Rochester firm, which proposes to restrict all its transactions with 800,000 customers and a large working staff to what the college professors call "deposit" currency. Employees are to be paid by check or a deposit slip, and even such petty items as onecent postage stamps are to be met by an order on the bank to pay.

Payroll robberies are directly responsible for this innovation, but there are sounder reasons back of it. For it leaves money in the banks, where it belongs, except in emergencies; it encourages thrift, it educates a wider circle to the advantages of the checking system and it demonstrates afresh that efficient modern business can worry along without such artificial counters as sundried brick or wampum or shovel blades or silver dollars or Federal Reserve banknotes. It lengthens the forward stride.

WHAT GOVERNMENTS CAN'T DO

Governments have had the law laid down to them in real Scotch fashion, but by an Italian economist who was one of the advisers to the International Financial Conference held at Brussels in October.

By way of preface to details, the Italian declared: Governments have ceased, to a very large extent everywhere, but in different measures, to furnish the general conditions necessary for the flow of production, such as:

- (a) Public order (absence of violence); (b) Strict respect for validity of contracts;
- (c) Stability, or fixity, of law.
 They have enhanced real cost to an enormous extent by such conduct.

Governments have everywhere, but in a different measure, taken into their management and away from private management a very large series of services for which they are utterly unfit, as ancient and recent experience has proved, viz.;

- (a) They cannot manage railways;(b) They cannot manage shipping;
- (c) They cannot manage harbors; (d) They cannot manage international commerce;
- (e) They cannot manage the commerce in bills; (f) They cannot regulate prices of commodities;
- (g) They cannot conserve and distribute commodities after requisition.

NEW CHIEF OF DAIRY DIVISION

Carl W. Larson was recently appointed chief of the Dairy Division, U. S. Department of Agriculture. succeeding B. H. Rawl, who becomes assistant chief of the Bureau of Animal Industry.

Dr. Larson is a graduate of Iowa State College. He received his M. S. degree at Pennsylvania State College and his Ph.D. from Columbia University in 1916, where he held an assistant professorship in agriculture and agricultural economics. He has been in government work at Washington since May, 1917.

A SCORE CARD FOR CITY ICE CREAM PLANTS

Arranged for Sanitary Inspection Following General Outline of Approved Score Cards For City Milk Plants

By F. W. Fabian

Assoc, Professor of Bacteriology, Michigan Agricultural College From an article in the Journal of Dairy Science

The output of the ice cream industry has greatly increased in the last decade and likewise its commercial value. We now recognize it as one of the many American industries. But while the output and value have greatly increased, the sanitary measures have not kept pace with the industry. In some places possibly they have kept pace and in others they have not. One thing is certain that on the whole the ice

a system of country and city milk inspection, we find no provision for inspection of ice cream plants or the farms supplying the cream and milk for ice cream. Many cities realizing the great need of sanitary inspection are taking steps to provide for this inspection.

It was while working for the Detroit Board of Health at Detroit, Michigan, in the summer of 1917 in the capacity of a sanitary inspector for ice cream

BOARD OF HEALTH SANITARY INSPECTION OF CITY ICE CREAM PLANTS SCORE CARD

Owner or manager			CHE		CORE	
Street and No			METHODS		SCORE	
City State				Per	- A1-	
					lowe	
e tent	de ton		Buildings		4	
Number of wagonGallons sold daily Bui	in tea	crentii	Cleanliness:			
D	ck tee	Cream		3		
Permit or License No				2		
Date of inspection			Cellings	2		
Remarks			Doors and windows	1		
	. Ins	pecter.	Shafting, pulleys, pipes, etc	1		
		1	Freedom from odors	2		
	84	CORE		3		
EQUIPMENT			Apparatus			
	Per-	A1-	Cleanliness:	2		
	fect	lowed	Thoroughly washed and rinsed	3		
Building:			Machinery handling mix 2			
Location:			Pipes, cans, etc 1			
Sanitary surroundings	. 2			3		
Arrangement			Machinery handling mix 2			
Separate receiving room			Protected from contamination			
Separate freezing room 2			ice cream containers	t .	7	
Separate mixing room			Thoroughly washed and rinsed	9		
Separate wash room 1			Sterilized with steam 15 minutes	3		
Separate sales room 1				1		
Separate boller room 1			Handling cream, milk. etc.		1	
Separate refrigerator room 1				3 -		
Construction	12		(50°F, to 55°F, 2)			
Floors, tight, sound, cleanable 2			(55°F, to 60°F, 1)			
Wails, tight, smooth, cleanable 1			Freedom from undue exposure to air.	1		
('ellings, smooth, tight, cleanable 1			Cooling	i.		
Drainage 2			Promptness 2			
Floors 1			Below 45°F 2			
Sewer or septic tank 1			Pasteurization of raw materials at			
Provision for light			145°F, for 30 min, and promptly			
(10 per cent. of floor space)			cooled to 45°F, or below	4		
Provision for pure air			Bricks wrapped by machine	2		
Minimum of shafting, pulleys, hang-			(Bricks wrapped by hand, 1)			
ers, exposed pipes, etc 1			ice cream container protected by			
Apparatus	12		cover	1		
Bolier 2	20			4		
(Water heater, 1)			(0'F, to 5°F, 3; 5°F, to 10°F, 1)	_		
Appliances for cleansing utensils			Protection during delivery	2		
and cans			(leed during entire year)			
Sterilizers for cans, etc			Inspection		σ.,	
Wrapping machine (brick ice cream) 2				3		
Clean table for hand wrapping 1			(Raw materials 1, Finished prod-			
Wash bowl, soap and towel in han-			uct 2)			
dling room 1			Inspection of dairies supplying			
Condition 4				3		
Ice cream freezing and mixing			(2 times a year, 2; once a year, 1)			
machinery 2			Miscellaneous		5	
Pipes, couplings and pumps 1			Cleanliness of attendants	2		
Cans and containers 1			(Personal cieanliness, 1; clean,			
Laboratory and equipment	- 3		washable clothing, 1).			
Water supply	- 2		Medical inspection of employees	1		
Clean and fresh 1			handling products	5		
Convenient and abundant 1			rightimess of delivery outilt	- 0	0	

cream industry has not received as much attention from a sanitary point of view as some of its sister industries. For example, in most cities, we do not find any bacteriological standard for ice cream or the constituents that go into its make-up. We do not have a score card for city ice cream plants as we do for city milk plants. Cities in which there is

plants, that my attention was called to the need of two things: First, regular sanitary inspection of all places, large or small, manufacturing ice cream, and second, a systematic way of recording the inspection. Inquiry was then made of the Bureau of Animal Industry as to whether they knew of a score card for ice cream plants and they replied that they had never issued such a score card and knew of none, unless, the Louisiana State Board of Health issued one. Upon writing to them and having them forward a copy of their score card it was found that it was not a score card at all but simply a memorandum card upon which the inspector made general notations of the sanitary condition of the place, but it was a step in the right direction, however, and a great improvement upon no score card.

I am sure that no one familiar with the situation would doubt the need of regular sanitary inspection by a competent inspector. Here we have a plant manufacturing a product which is easily contaminated and quite frequently is being handled by employees who are ignorant of the dangers that they may introduce by their ignorance and carclessness.

Now if this product were fed to cattle or utilized in any other way than it is, our problem would cease to exist; but since it is included in the human diet and occupies such a prominent place, it certainly needs careful sanitary supervision and inspection. Ice cream is not only used quite extensively in the normal healthy human diet, but is often recommended by physicians for the young, the old and convalescents alike. The same physician who would hesitate to recommend anything but certified milk (or some milk equally dependable) with a bacteria count of 10,000 or less, does not hesitate to recommend ice cream with no bacteria standard whatever, but which usually ranges from 10,000 to 1,000,000,000 bacteria per cubic centimeter.

The fact that ice cream is frozen seems to cover a multitude of sins in the layman's mind. Just as the farmer and most other people believe that straining and clarifying make dirty milk clean, likewise people believe that freezing kills all bacteria. All of these facts argue very strongly for regular sanitary inspection.

The duties of an inspector of ice cream plants, as in the case of any other sanitary inspector, are many. If he educates one man one way, advises another in another way, and assists the others in other ways, the sum total of his labors are varied and his efforts result in confusion. The best way to help all and secure uniform results is by the score card. In this way there is an outline to guide him and he can accord to all the same help and treatment.

The score card for ice cream plants as it is arranged here follows in general outline the score cards for city milk plants as approved by the United States Department of Agriculture, but is arranged to meet the needs of city ice cream plants. The ice cream plant is scored on the basis of 100 per cent. as perfect, 40 per cent, for equipment, and 60 per cent. for methods.

The sanitary location of the building is the first consideration. Next comes the arrangement of the building providing a separate room for each major operation. The construction of the rooms and other sanitary considerations as drainage, light, pure air, screens, etc., are next taken up. The apparatus necessary for keeping the machinery and utensils clean and sanitary, also the apparatus for handling ice cream in a sanitary way, together with the con-

dition of the machinery are given consideration. Laboratory and equipment are also taken into account as well as the water supply.

The sanitary methods are considered from the viewpoint of the cleanliness of the building, such as floors, walls, etc. The cleanliness and protection from contamination of the apparatus used in making, handling and storing the ice cream both before and after making are given consideration. The way in which the constitutents used in making the ice cream are received, protected and cared for before they are used for ice cream is given a very prominent place. The score card makes it possible for the man who goes to the trouble and expense of installing a pasteurizer to get a better score than the man who does

not. There are many arguments pro and con in regard to pasteurization of the constituents of ice cream but there certainly is no question as to the ultimate outcome of the matter. The time is not far distant when all cities shall require the constituents of ice cream to be pasteurized. A place is given to the wrapping of brick ice cream which is often wrapped in a very insanitary way. Storage and protection during delivery are likewise given a place. The bacteriological analysis of both raw materials and the finished products as well as the inspection of the dairies supplying cream are included under the head of inspection. This should help to produce a purer product. Then under "miscellaneous" comes the cleanliness of attendants and provision for medical inspection, thus helping to decrease the possibility of pathogenic organisms in the final product after all other precautions have been taken. Finally, comes the sanitary outfit to carry a sanitary product to its destination, provided all the other provisions in the score card have been lived up to.

DOGS AND GUM TABOOED

Dogs and chewing gum—both, no doubt, necessary to the happiness of mankind—are considered "matter out of place" when found in ice cream parlors or soda fountains, according to the rulings of two health departments.

The City Commission of Jersey City, New Jersey, prohibits the taking of dogs into any ice cream, confection or soda water shop on complaint of the New Jersey Retail Candy and Ice Cream Manufacturers' Association that dogs were served by patrons from the same dishes used by humans.

The Department of Health of Pennsylvania has issued an order through local health authorities asking proprietors of ice cream parlors and restaurants to inform their partons that chewing gum must be "parked" outside. Wads on the underside of tables and chairs may contain pathogenic microorganisms, the notice said.

REFRIGERATING SOCIETY TO MEET

The eighth Western meeting of The American Society of Refrigerating Engineers will be held at Chicago, Ill., on Wednesday, Thursday and Friday, May 25, 26 and 27, 1921.—WILLIAM H. Ross, secretary.

THE NEED OF A LABORATORY IN AN ICE CREAM PLANT

The Ice Cream Manufacturer Who Knows the Fat Content and Solids Content of His Ice Cream Is On the Safe Side

By H. M. Jones

Kansas State Dairy Commit From an address delivered at the Annual Convention of the Kanasa Ice Cream Manufacturers Association

During the past few years the ice cream manufacturer has had several problems to work out, among which is what can he sell ice cream for in order to make a profit? The question immediately arises, what does it cost to make a gallon of ice cream?

Some owners can answer this and some can not. There is only one thing to do and that is, have an accurate knowledge of the product you are manufacturing. To do this there is just one answer, have a laboratory, and use it.

The ice cream laboratory can help do a number of things, among which are the following: It helps advertise the business, it helps improve the product, it helps determine the amount of ingredients to use, it helps insure a good keeping quality, it helps meet the standards and it gives the owner a check on what is done in the factory.

The question no doubt arises, just how large a laboratory is needed. In this state we have two kinds of manufacturers, the large and small. Every plant needs a laboratory, but the large plant could no doubt have one which is larger and better equipped than the smaller one.

The large factory can afford to hire a specialist, who will devote all of his time in the laboratory. The small factory owner can not afford to do this, but a laboratory can be properly equipped without any great expense and then all that is needed is a reliable foreman, who will see that guesswork is a thing of the past, by devoting a part of his time each day in making the necessary tests.

Some may say it is too expensive to have a specialist and a laboratory. The ice cream manufacturer must not put the cost on the first year but let it extend over the years in which he expects to make ice cream. The ice cream business is not different from the butter business, because it is a fact, the composition of it helps determine the profit and the meeting of the standards. Every large creamery has a laboratory and knows the composition of every churning of butter made. They know whether it conforms with the standard. They buy the raw material paying for what they get. The time is at hand for each and every ice cream manufacturer to do this.

In buying raw material, especially where sweet cream is used, do not use guesswork. The cream should be bought by test and each delivery tested. It doesn't take long for some farmers to learn that each delivery is not tested. I remember a case, a few years ago, where sweet cream was purchased by the gallon, the owner guaranteed the test should be a certain per cent. A few days went by and no test was made, the quantity of cream increased, and when a test was made it was 4 per cent. below the guarantee. This means that the test of the ice cream

was lower for those few days, thus making an ice cream, the standard of which did not come up to the one prescribed by law, and the quality was not as good as usual.

Some manufacturers do a large amount of advertising. I heard of one large manufacturer saying 2 per cent, of the profit should be put back into advertising. If such is the case, you want to do the kind of advertising which will bring results. If you know the composition of your ice cream and that it is made in a clean place and handled in a sanitary manner and has a low bacterial count and is a safe product, when the healthfulness is considered, then you can advertise these facts. They should help increase your sales and your profits. The laboratory will help you to know these things.

Sometimes a man will sacrifice in one way in order to gain by another. I know of an ice cream factory where the ice cream maker is of the old school, that is, he does not believe in new machinery and new methods. The owner has installed modern machinery. One man said the owner could afford to lay this man off and pay him a salary and then hire an up-to-date ice cream maker. This owner puts out a product which has gained him a large number of customers. He is making a profit, hence he has not decided to make full use of his laboratory. The right man could make the proper analysis and help him make his ice cream which will be as good as before, and yet the profits will be larger.

For instance, I have checked his overrun on different days and it varies from 62 to 75 per cent, if the method used for calculating his overrun is accurate, and I believe it is, then all of you can soon figure what this man is losing. Also the ice cream maker does not determine the overrun on each batch, claiming, there is nothing to it and that he can guess it close enough. At one time he figured his overrun at 76 per cent, and the five gallon can weighed 24 lbs. net. Another time the overrun was 68 per cent. and the ice cream weighed 2434 lbs., also the can lacked an inch of being full.

In another factory I asked the man in regard to his overrun. He said it varied from 80 per cent. to 125 per cent. The day I was there it figured 88 per cent, and the ice cream weighed 231/2 lbs.

The laboratory does not need to be equipped extensively to determine the overrun, but some means should be used to do this, and some one to see that it is done. Perhaps it is hard to get the proper overrun on each batch. If the man is keeping a record of what he is doing, then it will be easier to determine what is wrong, and he will soon learn that certain things should be avoided, in order to get the best results. These cases show the need of having a standard overrun and then striving to obtain it on each batch. Then again if asked are you putting out a standard ice cream, one which will be the same each day, in the cases just mentioned the answer would be no.

Years ago it was easy to sell anything which was frozen and call it ice cream. The people today, who eat it, know the difference between good and poor ice cream, and it doesn't take them long to find out who is selling the best.

The laboratory helps you to make a standard ice cream and then you can advertise it as such. It is a great help to the new man who is just starting up. A standard product, one which will have little or no variation from day to day, will soon get the consuming public demanding that kind of ice cream, and once you have gained a customer, it will be hard for another concern to take him away from you. This is true of any business because the customer will say. why change when the goods I am buying are of good quality and my patrons are satisfied. One manufacturer told me "he seldom lost a customer after he had given him a trial, because he made ice cream of a certain quality, one which his trade demanded." This statement was not made in a bragging way. While I do not consider myself an expert judge of ice cream, I do feel that I have eaten enough of it, at various places, so that I can tell good ice cream, and I am sure this man is making the best ice cream in his town and has a large share of the business, notwithstanding the fact that he has at least a half dozen competitors. Of course if the ice cream manufacturer can be so located that he has little or no competition, then he can make an ice cream having an abnormal overrun, which is an icy, fluffy piece of goods, and the public will have to stand for it.

In a large number of cases, when a manufacturer makes homogenized cream, he estimates the butter as containing 84 per cent, fat. You cannot be sure of this unless you test it. I talked to one ice cream manufacturer in regard to this. He kept a record of each day's mix and the amount of ingredients used. I have checked over his figures and found if the composition of the ingredients used were the same as he figured, his ice cream should test 14 per cent. I have taken samples of the ice cream, made from the batches. the figures of which I had checked over, and it tested only 12 per cent. It was evident that some of the ingredients did not test as high as he expected. All of you can readily see what a laboratory would have done for him. Perhaps you will say since he did not have to pay a fine for making low standard ice cream, that his profits were larger. In a way that is true, but on the other hand, how was he to know that the ice cream would not test 15 or 16 per cent. The thing to do is ot test your batch after you have it ready to freeze. If it is found not coming up to standard, it is then very easy to add ingredients, so as to make it standard.

I am sure all ice cream manufacturers know what it means in dollars and cents to put an extra per cent. of butterfat in ice cream. I am sure all of you know with the increased competition which you have and the high cost of everything, that you must adhere closely to the standard and not go above it. The

laboratory will help you to do this, providing you put a man in charge who will test the ingredients used, and then figure your mixes accordingly.

The small manufacturer can profit by knowing the test of the cream used. When asked "how much cream does he use" his answer often is: "Oh, I use half cream and half milk, and the cream would teabout a certain per cent, so I guess I have it about right." A Baboock tester would be a good investment, providing he kearns how to use it and then uses it.

I collected samples from one manufacturer. Some the tests were as high as 17-18 per cent. while others were down to 9 per cent. His figures showed it should test 14 per cent. If he had been using the tester he would have soon discovered that some of the batches taken from the vat were high and some low, and he would not have waited for the inspector to come around and find him putting out some low test ice cream. Also this would have led to an immediate investigation, and it wouldn't have taken him so long to discover that the mix was not being properly mixed.

I believe the time is not far away when we will have a bacterial standard, and the manufacturer who has the laboratory will be ahead of those who have none. During the war some realized this. I know of one manufacturer, who saw the handwriting on the wall. He did not have the laboratory, but he purchased some vats and got ready to produce an ice cream of a low bacterial count. A short time later the S. A. T. C. was started. He was ready to serve ice cream with a low laterial count and at the same time satisfy the inspectors that he had a clean, safe, ice cream.

We know that as cleanliness increases, bacteria decreases. Even if we have no standard on the statute books, the man with the laboratory can make counts on his ice cream, in various steps of its manufacture, and thus find out the place where he is undoing all the good he has accomplished, in another place. Some may say that a man should have enough pride in his business, to put out a clean product. That is true, but you cannot always tell what your help will do, when no one is around. Recently my wife and I went to a drug store in a certain town, not in Kansas, and told the man we wanted some ice cream. He said, "which kind do you want, the 60 cents per quart or the 70 cents per quart?" I asked the difference and he told us that the 70 cents per quart was made by a certain factory. I had heard a great deal about this factory and had seen their advertisements, so we bought the 70 cent ice cream. This ice cream was served to four of us. Immediately all of us noticed a very disagreeable taste. I made the remark that it tasted like the ice cream had come in contact with dirty cans, or vats. Not long afterwards I had the pleasure of visiting this plant, which was not in Kansas, and watched the methods used. I soon was interested in the way the ice cream cans were washed. As the cans slid down the chute, two negroes caught them and wiped them out with dirty wet rags. Occasionally this rag was held under the faucet. If the manager of this plant did not know just what effect this would have on the bacterial count a laboratory would soon show him. Then he could talk in plain terms to his employees, and impress on them the necessity of cleanliness in every step. I remembered the ice cream which I had eaten a few days before and felt sure some of the objectionable taste was due to this practice just mentioned.

In the large plant the owner can check up on the work by the reports which he receives from the laboratory. He can keep in touch with his product and when some one makes a complaint about the quality, it is much easier to determine what was wrong. He can then talk to the one who makes the complaint, in a way which will convince him that he is striving to give the consuming public a good ice cream

Then, too, the owner has the reports to show what each mix should test, and the test for same. All of you know the inspector collects samples, at most any time and any place. If the tests of some of the samples were below standard, when the inspector returned, you could show him your reports and tests and I feel sure it would help convince the inspector that you were not a willful violator of the law.

The creameries keep a record of the composition of each churning of butter and number the packages accordingly. Those of you who make butter know you have to watch the moisture content. Once a creamery man told me, he was notified that samples of his butter had been collected and showed excessive moisture. He produced his reports on that shipment and the reports covering a year's business and proved to the inspector that he had not intentionally violated the law. In this case we find the laboratory and the records of the work done in it, being a great help.

Not long ago an ice cream manufacturer told me samples of his ice cream had been collected and the tests were below standard. He immediately showed the inspector that he had not intentionally violated the law, which immediately started an investigation to determine what was the cause of the difference between the manufacturer's record and the inspector's record. Thus we can see another advantage of a laboratory.

It seems to me that the ice cream manufacturers of Kansas are more in need of a laboratory than ever before. You want a different ice cream standard and contemplate having the present standard changed. This means that you will no doubt have a standard which must be adhered to in every respect. The man who knows the fat content and solids content of his ice cream is on the safe side. He can only know this by testing and this will be done in the laboratory.

Thus we have two sides of the ledger, both represented by cash, one showing cash spent to manufacture the ice cream and the other showing the amount received from the sale of it. Which side do you want to be the larger? All of you know you must have the side which shows the returns the larger, as this determines the length of time you can stay in business. To do this you must know your business from beginning to end. You must know the different ingredients and then standardier your mix so that your ice cream will he of a certain standard, not on one day but on each day, of the year. In order to know these things I feel there is one thing back of all of them and which is really the heart of the ice cream factory and that is the laboratory.



TTILITY AND ADVERTISING VALUE are combined in this Liou rules used by the Headler Generacy. Co. Baltimore, Md., for rush orders and other special delivery wate. The tab shaped body is insulated and errigenest after the manner of the Headler type of ice cream delivery truck and carries 25 Jajallon cans. On the back end of the platform there is space to carry as Espallon this iced up.

AVOID SOUR MILK

With the coming of spring, milk dealers realize that there is increased danger of sour milk being received. At this time of year many warm days occur, but the producers often do not realize the necessity of properly cooling the milk, and of tapping the ice supply harvested during the past winter.

It is as important to cool the milk now as in the warm summer months, and now is the time for dealers to caution their producers against carelessness in their production methods. Often more sour milk is received at the plant in the early spring and early fall than during the summer, because producers often do not realize the necessity of cooling milk at this time of year.

The dealer can help to have the milk arrive in good condition at the plant, by seeing that it is brought to the plant immediately on arrival at the railroad station, and that when it gets to the plant it is immediately sent to the pasteurizer or put in a cool place until it is pasteurized. No milk should be allowed to stand around in a warm receiving room for any length of time. The dealer should take care to see that all cans are thoroughly cleaned, steamed, and dried before being returned to the producers. Finally, he should see that the milk is properly pasteurized, by heating it to 145 degrees Fahrenheit for 30 minutes. It should then be immediately cooled below 50 degrees F., and put in a cold room and kept cold until it is put on the consumer's doorstep. All milkhandling apparatus must be cleaned and sterilized after each using .- Milk Plant Letter No. 85, U. S. Dept. of Agriculture.

"ON HAND" SHIPMENTS

A campaign has been started in the express business, to keep down the number of shipments which find their way to "On Hand" departments, because the addresses are inaccurate or incomplete, or because of cancellation of orders or some other disagreement between shipper and consignee. An energetic, effort is being made to clear up the undeliverable matter found in the "On Hand" rooms of the express company and at the Right Way meetings of the express company and at the Right Way meetings of the express employees throughout the country; the subject is receiving special attention.

It is the opinion of operating heads in the express business that the growth of "On Hand" freight is a handicap to improvement in the express service. Practically every industry is interested in prompt delivery of goods and the carrier is seeking the cooperation of the shipping public to remove the heavy burden which the storing and care of "On Hand" freight involve. It is found that a large number of claims and annoying controversies are directly chargeable to the abuse of the "On Hand" privilege.

While it is a decided advantage to the transient shipper to have the express carrier hold his goods for him until the arrives, and to do this without added expense, it was not intended that regular express patrons would ask or expect the carrier to store their goods while some argument between shipper and consignee was being settled. The express company does not generally charge for storing shipments, but some such step may be taken unless the situation improves.

In seeking the cooperation of the shippers, the transportation company lays emphasis upon the importance of every shipper having the consignce's full name and address, street and number, plainly stendled or otherwise marked on each piece he sends by express. It is equally important, the carrier points out, that each shipper shows his name and address clearly on each piece of a shipmer and address clearly on each piece of a shipmer.

That consignees should accept delivery of shipments tendered and not leave them on the carrier's hands is the contention of the express company in this campaign. This should be done even if shipments are offered in bad order, for then the consignee can dispose of them to the best advantage and thereby reduce the loss to the lowest possible figure. Shippers and consignees are urged by the express company to give special attention to postal notices sent out by the carriers to both of them, when a shipment cannot be delivered by an express driver, for any reason.

When a shipper is informed by the express company, through the usual postal notices, that the consigne to whom he sent his goods has refused to accept them, it will faciliate matters if he will give prompt and definite instructions for the disposal of the shipment in question.

LIST OF COST BOOKS

The National Association of Cost Accountants, 130 W. 42d St., New York, N. Y., has just issued as Volume II, No. 10, of its Official Publications "A Bibliography of Cost Books." This bibliography probably contains the most complete list of cost books which has been published in this country. It is limited to books, it being the intention to cover pamphlets and other material in a supplementary bibliography to be issued later.

The bibliography is divided into five sections—one containing books devoted to the general field of costs; one to books on accounting and auditing which contain sections dealing with costs; one to books on industrial engineering with sections on costs; one to books on costs for particular industries, this section being divided into the leading industries; and one dealing with special phases of cost accounting, such as overhead, depreciation, et cetera. In all, about three hundred and fifty titles are listed.

INTERNAT'L DAIRY EXHIBITION

An international dairy exhibition is to be held at Palermo (Buenos Aires) from May 8 to 27, 1921, by the Argentine Rural Society. According to the pampilet, published by the society giving the program and rules, the exhibition will be divided into three sections: Exhibition of cattle, ewes, and goats; instruments, machines, and installations for the dairy industries; and dairy products.

SOME PROBLEMS OF TRANSPORTATION

Theoretical Express Rates and Classifications Should Be Discarded and Those Based Upon Actual Conditions Made

By L. W. Moore
Traffic Manager, Harding Cream Co., Omaha, Neb.
From an address delivered at the Annual Convention of
the Association of Ice Cream Manufacturers of Iowa

The greatest problem the ice cream manufacturer faces today is Express Transportation.

During the past year, we have seen many important changes in our transportation facilities, of which the beginning was the transition from Federal to private control, followed by an application on the part of the Express Company for an increase in its rates. Incidental thereto, it proposed certain changes in express classification among which was an item to increase the weight on ice cream, fifteen pounds or from 100 to 115 and to increase the rate on returned empty carriers 25 per cent.

During the comparatively few years this industry has existed it has made a wonderful growth. One of the largest contributing factors to that growth has been a reasonable and conducive rate, coupled with a dependable service. After emerging from the abnormal period existing during the war and after it, this industry has been staggered by the proposed increase un its traffic.

The increase on the rate factor alone was not sufficient so the weight was raised and the rate on empty carriers was increased. Although vigorous opposition has been made thereto, the Interstate Commerce Commission has found that the proposed increase, both in rate and weight have been justified, excepting the rate on the empty carriers which remains as it was. As a result, this industry finds it-self paying on the basis of 41 per cent. increase, rather than 26 per cent, as other industries are obliged to Pay.

This industry is one that can never be considered from a national scope. Likewise, there is no classification that can be made governing the traffic as a whole. In rate construction and classification construction, the different parts of the United States are divided up into what is called classification territories. The classification territory is divided into three groups, namely: Eastern, Southern and Western. The one in which we are interested is the western territory, lying, generally speaking, west of the Mississippi River.

The time has come, when theoretical rates and classification must be discarded and a rate and classification based upon the actual conditions must be made.

This industry is distinguished in the western territory from other territories just as the classification and rate construction is distinguished as between that same territory. In the eastern territory, ice cream shipments are short hauls. The shipment is considerably more heavy, the traffic undoubtedly, figuring on the individual shipment, is not as remunerative as in the West. Nevertheless, the western manufacturer is obliged to bear the burden, parricularly of the conditions obtaining in the East. This industry is entitled to a rate that is based in the first place upon the cost of service. It is not opposed to, but in favor of allowing the carrier a reasonable return on the investment but with the conditions as they now are and with this industry threatened with an eliminating stroke, a distinction must be made.

To go now to the state proposition and perhaps 80 per cent. of the shipping business is intra-state, it may be said that a shipper of lowa is entitled to a rate based upon the cost of service in lowa and the reasonable profit upon the investment must be based upon the property owned within the state. Classification must be made with respect to the conditions obtaining locally and a rate that is conductive not prohibitory must be provided.

Some years ago, the people of Iowa through their Legislature created a Board of Railroad Commissioners. When that body was created, it must have been the intention of the Legislature to have their exercise jurisdiction not only over the reasonableness of the transportation rate but protect home industry. It seems to be just as much of a moral obligation to see that a particular industry is not conficiently on overwhelming rate as to see that the particular carrier does not suffer a loss from such traffic.

The classification and rate now obtaining within this State is wrong, unreasonable and discriminatory and corrections must be made to adjust same.

The weight of a five gallon packer ready for stipment in lowa averages about 140 pounds. Following the usual course of the Express Company to allow 25 per cent. off for ice, the revenue weight would be approximately 105 pounds instead of 115 pounds; yet the Express Company has asked the lowa Commission to grant the same increase and change as was permitted by the Interstate Commerce Commission.

The State Commission has granted the same increase as the Interstate Commerce Commission permitted. The classification matter, however, has been held in abeyance and to date no decision has been rendered. Evidence has been presented to the Iowa Commission showing not only the weight actually obtaining on shipments within the State, but the discriminatory effect of the rate. It is thought, if an opinion may be ventured, that the classification increase will not be permitted.

Another factor of no less importance, that has had hazardous effects upon this industry is, the so-called, block scale obtaining at the present time. This scale was established by the Interstate Commerce Commission for interstate movement and it was constructed after a careful study from a national standpoint; but to apply that rate to a particular commodity in a particular State which has local conditional control of the control of the

tions and factors inhered only in that State is fundamentally wrong.

The ice cream shipper of Iowa is entitled to a rate equally distributed with respect to the mileage traversed. He is entitled to a rate that is based upon mileage progression. There are two ways to remedy this difficult

One is by the adoption of a sub-block scale, the other by the restoration of the mileage distance scale. The lowa Board of Commissioners is on record of not approving in the block scale and it is believed that the shippers of lowa will be protected from the continuance of such a scale.

Inquiry has been made as to the power of the Interstate Commerce Commission, presuming that the Iowa commission did not find the weight increase justified, whether or not the Interstate Commerce Commission can constitute the difference in weight between inter and intra-state traffic, a burden upon inter State Commerce.

During the past few months there has been coniderable said over that subject. The Interstate Commerce Commission has held as a general proposition, it has power to alleviate and prescribe state rates that do not conflict with and do not burden interstate commerce. The question is now up before the Supreme Court of the United States and the final outcome is more or less a matter of conjecture.

My personal opinion based upon the study of the law governing, is that the Interstate Commerce Commission will be reversed. It is doubtful, however, as to whether the commission would ever attent to prescribe a rate on a particular commodity of which 80 per cent, is intra-state business, without giving careful consideration to the local factors.

It has been said that the increase of 41 per cent, will cut the shipping business of ice cream 50 per cent. Long distance shippers are particularly hard hit and while no particular study has been made on account of shipments being out of season, if the express rate does eliminate 50 per cent, of the business it is only a matter of time until the large manufacturer of today will be forced to surrender to the so-called "Cellar" production.

The purpose of the increase proposed and permitted was to obtain additional revenue. In this industry however the purpose has been defeated and instead of providing more revenue, it will result in less revenue than ever for the Express Company.

I have been asked to comment upon the subject of carriers liability for loss occasioned through negligence and the pick up and delivery service a shipper is entitled to. In the first instance, the Carmask and Cummins Amendment to the Interstate Commerce Act, has defined definitely and rigidly the liability of an interstate carrier, making them liable as absolute insurer for the transportation of the goods entrusted to it. With the exception of an act of God and a few other similar causes. On intrastate shipmens the liability is governed by the Iowa statutes, the liability is governed by the Iowa statutes follow the federal statutes in defining the responsibility of a common carrier.

In the second instance, there are no definite or

fixed factors for the establishment of a pickup and delivery service. The Express Company has tariffs defining the limits where such service will be provided in each particular city where it is accorded. It may be said, generally speaking that the picking and delivery service is based on the requirements and traffic of each particular city and one community is entitled relatively speaking to the same service as another community. Ice cream shippers are entitled to the same service as any other shipper and that right may be enforced.

Not only does the above apply to pick up and delivery service but to also train service and they may insist that there be no discrimination in the service provided.

In closing, I would like to make one or two facts particular significant, the first of which is that this industry is now in position of surviving or perishing, It will survive only as long as the aggregation of manufacturers pull together and for one purpose. The rates on ice cream are too high and they must be lowered and it can only be accomplished through cooperation of each member.

The second is that much can be accomplished by mutual understanding and cooperation with the carrier. More so today than ever. It is manifest that our transportation facilities depend upon mutual understanding. I feel that the officials of the Express Company are desirous of obtaining as high a standard of express transportation as can be obtained, that they are desirous of remedying any injustice or wrong which can be accomplished through mutual cooperation. This industry without question is ready to meet the carrier halfway and we trust in time there will come a more dependable and satisfactory service.

RELIEVING CHEMICAL BURNS

In one sense, burns resulting from chemicals are easier to handle and relieve than many other kinds of burns. Of Gourse, it is necessary to bear in mind that there is one general rule for dealing with chemical burns; which is that acids neutralize caustics and alkalis and caustics and alkalis neutralize acids.

This rule, however, is not absolutely infallible, and the worker whose employment takes him among chemicals, and therefore submits him to such hazards, ought to know the best neutralizer for each chemical. The National Safety Conneil offers the following suggestions covering this point:

For acid burns-nitric, sulphuric, mixed, hydrochloric, acetic, oxalic, and pierie (for oleum, firswipe off oleum with a clean loth)—bathe freely with water and apply a saturated solution of bicarbonate of soda

For alkalis—caustic, potash, caustic soda, ammonia, lime, and soda ash—bathe freely with water and then apply a 2 per cent, solution of acetic acid.

For hydrofluoric acid, bathe freely with water and then with dilute ammonia water.

For carbolic acid burns, wash at once with water, then with alcohol or a solution containing equal parts of sweet oil and lime water.

For hydrocyanic acid, wash with water, then with hydrogen peroxide.

CONCRETE FUEL OIL TANK CONSTRUCTION

Precautions To Be Observed In Building Small Oil Storage Reservoirs For Use In Industrial Plants By H. B. Andrews

From an address delivered at the annual convention of the American Concrete Institute

The reservoir should be located a safe distance from inflammable structures as far as possible consistent with pumping requirements, and should be covered with at least 18 inches of earth, if near buildings, to decrease fire hazards and also to minimize oil evaporation. If distant from buildings it should be at least half underground, and, if possible, the excavated material should be used in banking up around it.

The reservoir should be limited in size for two reasons: First, the necessity for not exceeding a day's working limit in operation of pouring concrete so that joints between operations may be eliminated, and second, so that in case of an accident or fire in any reservoir too much oil in storage will not be involved. This size limit should not be over 300,000 gallons under most conditions, and the majority of contractors have not the facilities to construct properly a reservoir of this capacity.

Reservoirs should be circular in shape, the better and more directly to take care of involved stresses and to avert danger of tensile or temperature cracks. They should be so proportioned and designed as to limit the number of pouring operations of concrete. in order to avoid joints between these operations.

Care should be taken to provide for all exterior stresses, such as hydrostatic pressure from groundwater, earth pressure on walls, and roof if reservoir is buried, and also to avoid as far as possible concentration of loads on walls or footings. Where joints are absolutely necessary they should be so protected that there will be no leakage through them. Regarding hydrostatic pressure, while engineers have found from tests that this pressure in soils is only about 50 per cent of the full head of water, it is not safe to design for stresses less than the full head, as any deflection in the concrete admitting a film of water between the earth and the concrete will produce the full hydrostatic pressure.

Concrete surfaces must be temporarily or permanently protected so that oil will not come in immediate contact with them if the concrete is less than six weeks old.

Falsework must be designed to hold concrete temporarily in place so that it will not fail or be distorted while placing concrete. It is especially necessary to provide for the firm holding of wall forms, as the pressure of several feet of concrete poured quickly as a monolith is intense, and any "give" of the forms after the concrete has obtained its initial set breaks up the crystals already formed and allows expansion of the concrete mass, with resultant porosity and loss of strength.

Concrete must be so designed that it will resist all exterior stresses to which it is subjected and so

that it will be oil proof. One of the principal features of this design is to make the walls of circular reservoirs in tension sufficiently thick so that the ultimate strength of the concrete in tension will not be exceeded. It is not meant to leave out the steel reinforcement so that the stress will theoretically be borne by the concrete, but nevertheless it will be borne by it unless some unforeseen weakening of the concrete should throw it upon the steel.

An extended investigation, by the writer, on high circular concrete standpipes for water showed that if the concrete in the wall was stressed beyond its elastic limit, or ultimate strength, which is practically identical, vertical hair cracks will appear of sufficient width to admit water into the body of the

This ultimate tensile strength in a 1: 11/2: 3 concrete from tests made for the writer at the Watertown Arsenal was 203 lb, per square inch. Where the concrete is in large sectional areas, and reinforced, this tensile strength will probably be somewhat higher. If a stress not exceeding 150 lb. per square inch is allowed in tension there will be no danger of these vertical cracks appearing.

Reinforcement must be so designed that it will take care of all interior and exterior stresses, and with fittings to hold it rigidly in place while the concrete is being poured. Steel in tension in walls should not be stressed over 10,000 lb. per square inch to conform with insurance company requirements. The writer does not think that it is necessary to figure the stress as low as this, under usual conditions, as he has satisfactorily constructed many reservoirs using a stress of 14,000 lb. But the lower stress is an additional safeguard against inferior workmanship by inexperienced contractors and against any decrease in bond strength due to oil penetration of concrete. It is probably unwise to depart radically from insurance company recommendations.

All reinforcing rods in concrete exposed to oil should be of a deformed section, for better bonding value.

For other parts of the reservoir the recommendations of the Joint Committee on Concrete and Reinforced Concrete should be followed.

The concrete should be no leaner than a mix composed of one part of cement, 11/2 parts of sand and three parts broken stone or gravel. To this mix should be added a "densifier." Hydrated lime has been found economical and satisfactory for this purpose, using 10 lb. of dry lime to each bag of cement. The stone must be hard and clean, the best material being traprock, granite or gravel. The sand must be free from any deleterious matter, and

should be well graded. Cement should be of an established quality.

The concrete should be deposited continuously in concentric layers not over 12 in. deep in any one place. No break in time over 30 min. is permissible in depositing concrete during any one operation, and if any delay occurs amounting to 30 min. or more the previous surface must be thoroughly chopped up with spades before the next layer of concrete is deposited.

The different operations in pouring are: (1) The pouring of the floor and footings; (2) the pouring of the entire wall; (3) the pouring of the roof. In small reservoirs the wall forms may be supported so that the footings, floor and wall may be poured in one continuous operation. An approved joint or dam must be made between the floor and the wall.

Concrete should be made between the floor and

Concrete should be mixed by a mixing plant of snflicient size and power to carry out each separate prearranged operation without danger of delay during the process. The materials should be mixed at least 2 minutes in the mixer, using just enough water to obtain a plastic mix without excess water coming to the surface after the concrete is deposited, and a measuring tank should be used so that the amount of water may be kept uniform.

The concrete when deposited in forms should be well spaded by at least four competent laborers who are not afraid to use their muscle in compacting the concrete thoroughly and working out the trapped air bubbles.

Reinforcement should be of round deformed medium steel bars. These bars should be bent or curved true to templets carefully placed in their predesigned location, and rigidly maintained they mechanical means. No laps should be less than 40 diameters and no two laps of adjacent rods should be directly opposite each other.

The forms should be of a good material, strongly made and so braced, or held in place by circumferential bands, that no distortion allowing displacement of concrete during its initial set is possible.

The surface of the floor should be troweled smooth as soon as it can be properly done. If all previously named precautions are taken, there should be no defects in the wall to correct.

Concrete designed and placed as recommended herein is practically oil tight, but as oils are somewhat detrimental to fresh concrete it is advisable to put on an interior wash or coating to protect the fresh concrete from the action of the oil, for such a time as may be necessary for it to cure and harden sufficiently. Silicate of soda, while not a permanent coating, has been used satisfactorily for this purpose according to the following specification for oiltroofing.

The surface of the floor and the interior surface of the wall are to be coated with silicate of soda of a consistency of 40 deg. Beaume and applied as follows:

First Coat-One part of silicate of soda and three

parts water, applied with brush, and all excess liquid wiped off with cloth before drying.

Second Coat-One part of silicate of soda and two parts water applied as above,

Third Coat—One part silicate of soda and one part water, applied with brush and allowed to dry. Fourth Coat—Applied same as third.

KANSAS DISTRICT MEETING

A district meeting of the ice cream makers was held at the State Agricultural College at Manhattan, Kansas, February 23 and 24. About 45 managers and ice cream makers were present for this meeting.

The main feature of the meeting was the discussions led by Prof. Baer of the Oklahoma A and M College on the preparation of mixes, standardizing, calculating solids and a discussion of the ice cream which was submitted for scoring. There were 28 packers of ice cream in the contest.

The men present were divided into six sections and as sections each man scored all of the ice cream and in the summary the average score of the six sections is given, as well as Prof. Baer's score who was the official judge of the day.

The statements made by the manager and ice cream makers indicated a great interest in this kind of work, and evidently if more of these contests were held considerable interest could be aroused throughout the states. The ice cream makers remarked that they could not conceive of having so many different kinds of vanilla flavor. It was also noted that there was a great deal of discussion in regard to the body and texture. The bacteria count was high except in a few cases. Perhaps the practice of cleaner methods would help the count. The fat and solids and bacteria count was handled by the State Chemist and College Bacteriologist. Many men at this contest admitted that they were surprised to find out how their ice cream compared with some of the others, and it furnished these men an ideal upon which they can base their practice in the future. It will also encourage him to strive for better methods in his work and in some cases better equipment to do his work with. At the close of the meeting the men present voted to have this ice cream contest next year due to the fact that they derived more profit from this contest than they had any idea of.

-G. A. Maxey, Ass't Professor in Dairy Hus-, bandry, Kansas State Agr. College.

CRAVED SODA FOR TWO YEARS

The American freighter Santa Clara, from Calcutta and French and Spanish ports, ended her sixty-day voyage today when she docked at Port Richmond. Aboard the freighter as a third steward was Mrs. E. R. Pottle, wife of the American Consul at Bilboa, Spain, and her three-year-old daughter, Edith. Her American home is in Brooklyn.

The first thing Mrs. Pottle asked was whether they still served ice cream sodas in this country.

"I haven't had an ice cream soda in two years." she said, "and Edith has never tasted one."

ARE UNIFORM STANDARDS OF QUALITY PRACTICABLE?

Experimental Data Presented In An Endeavor To Determine a Fair and Workable Standard For Ice Cream

By G. D. Turnbow

Asst. Professor of Dairy Industry, University of California From an address delivered at the annual convention of the Calif., and Southwestern States Ice Cream Mirs', Assn.

There has been much discussion of late as to standards for ice cream. Undoubtedly, from the standpoint of fairness to all concerned, there should be some standard established for the finished product. Just what that standard should be, however, in order to be practicable and workable, is so largely a question of personal opinion or judgment, rather than being based on any absolute facts, that much divergence in opinion, as to the ideal product, between individuals having varied interest within a state, as well as between the different states, is to be expected.

Up to the present time there has been more agitation as to the adjustment of the fat content than any other constituent, and it is generally conceded to be one of the most important ingredients to be taken into consideration. The percent, requirements for fat varies greatly with the different states, for instance: , A few states have standards as low as 6 per cent, several 8 and 9, quite a few 10, others 12 per cent, and a few require 14 per cent, fat. Thus far, you see, even the requirement for fat has approached no definite standard, since there is over 100 per cent, variation in the fat requirements between one state and another.

A certain amount of fat is desirable from the standpoint of palatability. A cream carrying from 11 to 12 per cent. fat, is probably most palatable to the greatest number of people, and if the margin allowed for manufacture would permit, should be recommended. To increase the fat content beyond this figure would be of no advantage, for no doubt the consumption would be decreased by so doing, for the public as a whole finds an ice cream of high per cent. fat less desirable.

Professor R. M. Washburn, one of the best authorities on ice cream, has gone on record in the May, 1919, issue of the Milk Magazine as recommending a 9.8 per cent. fat content. In a recent letter from Professor Washburn, he states as follows:

Briefly, my judgment is that there should be a fat standard of 10 per cent. for plain vanilla, 8 per cent. for fruit, nut and chocolate ice creams. This difference is in order that the regular vanilla mix may be used for the other kinds of ice cream, and the dilution, by adding the chocolate, fruit, etc., will be taken care of by the lower standard, which even at that will cause the special creams to cost more than the straight vanilla.

So much from the standpoint of fat content. Now the us turn to the consideration of another possible basis for obtaining a standard product, which according to Professor Washburn, if I may be permitted to quote him again, is the only practical standard that can be used in ice cream, and that is: The absolute standardization of the minimum weight of food solids in a gallon of ice cream.

Montana has already seen fit to require that the

mix from which the ice cream is to be made shall not contain less than 33 per cent, total solids; this is only one step, however, and does not solve the situation, for the yield which can be made to vary, may cause a variation of approximately 25 per cent, in the true food value of a gallon of ice cream. We all know that the greater the percentage of total solids the higher the yield, though we may still deliver the same amount of food value per gallon. If you were to fix a standard on a percentage of total solids basis, without a stipulated weight of solids per gallon, a large swell would defeat the purpose of the law. To illustrate this point, I call your attention to Table I. (All the figures that I am going to give you are taken from commercial plants from regular runs.)

			T.	BLE I			
Exhibe	% of T. S. in Mix	Desired Yield	Total Wr. of L. C.	Total Gals. of L. C.	Wt. per Gill.	Wt. of Solids per Gal.	Flavors
A B C	33,80 36,03 33,01	100 110 100	731.194 1731.164 1180.500	166,370 410,313 253,160	4,395 4,219 4,663	1,4886 1,5209 1,5393	All All

You will note that if the standard should require a certain percentage of total solids, say 33 per cent, as does Montana, Exhibit A would only deliver to the consumer total solids at the rate of 1.4886 pounds per gallon. Under the heading of "Desired Yield" I wish to state that it was the aim of the manufacturer to pull his batch when this 100 to 110 per cent. yield was obtained. In two of the exhibits a Mojonnier overrun tester was used. In the other exhibit the operator depended upon his skill. In Exhibit B there was a marked increase in total solids of the mix, a little higher yield was aimed at and, as a result, the consumer was but little better off than before, the difference in weight per gallon being only .023 of a pound more than that of Exhibit of

In Exhibit C we have \$3.01 per cent, total solids in the mix, with a cream weighing 46.63 pounds per gallon. Still we deliver 1.5393 pounds food solids per gallon, as you see, a trifle more than either Exhibit A or B. From these figures and the general knowledge of every one familiar with the manufacturing of ice cream, it can readily be seen that a standard requiring any definite percentage of solids in the mix, without stipulating the weight of solids per gallon of ice cream, would be worthless.

Considering then the standardization of ice cream on the basis of total solids, let me call your attention to Table II, which illustrates the necessity of careful study before a definite standard should be required.

		3	ABLE	II.			
Exhibit	Plavor	Lowest Wt. per Gal.	Wt. of Solids per Gal.	Ilighest Wt. per Gal.	Wt. of Solids per Gal.	Se Vari-	% T. S.
A	Vanilla	4,00	1.352	6.052	2,066	51,3	33,50
B	Vanilla Straw	3,03	1.092	4.958	$\frac{2.163}{1.787}$	98.0 46.7	36.05
C	Choc. Vanilia Straw Choc.	4,479 4,30 4,40 4,80	1.615 1.419 1.452 1.584	5.20 6.0 4.71 5.11	1.875 1.981 1.555 1.687	16,09 39,53 7,05 6,46	33,01

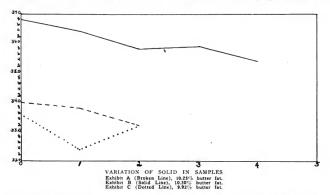
In Exhibit A you will note that the weight per gallon of ice cream varies from four pounds, as the lowest figure, to 6.052 pounds, as the highest. This gives us a weight of total solids per gallon in the first instance of 1.352 and in the second of 2.066, or a variation within the mix of 51.3 per cent. In Ex-

methods employed, the wide variation that is likely to occur within the same mix.

The question has arisen, is any particular draw within the batch responsible for this variation in the mix? To investigate this phase of it I have prepared some tables for your consideration.

You will note in Table III that the greatest variation comes near the middle of the batch, indicating that the yield is slightly lower in the last drawn. In this exhibit we are dealing with a mix carrying only 33.8 per cent, total solids, including all flavors. From this exhibit we note the variation in weight per gallon is very slight, being only 0.22 pounds solds per gallon, a figure too small to be considered.

In Table IV, Exhibit B, we have a little different proposition in that we have a 36.05 per cent, total solids and a little larger volume. The result is a very slight variation in weight per gallon and a trifle



hibit B we find a variation in vanilla of 98.0 per cent. In the latter case we started with a mix of higher percentage total solids and the resulting ice cream had the lowest total solids per gallon, or 1.092.

In Exhibit C practically the same thing holds, except that the variation is not quite so great. It will be noticed that in Exhibits B and C both strawberry and chocolate are quite uniform in weight. From these figures you can readily see, with the present TABLE III.

Exhibit	% of T. S.	Draw	Total Wt. of I. C.	Total Gal. of l. C.	Wt. per Gal.	Wt. of Solids per Gal.	Flavors
AAAA	33.80 33.80 33.80 33.80	1×1 2nd 3rd 4th	189,063 178,813	43,250 40,428	$\frac{4.371}{4.423}$	1.477	All Flavors All Flavors All Flavors All Flavors

larger weight of solids per gallon. The second draw in this case shows the lowest weight per gallon. It have heard the statement made that so much skil need not be exercised in turning out a uniform product

			TA	BLE IV	٠.		
Exhibit	% of T. 8.	Draw .	Total Wt. of I. C.	Total Gal. of I. C.	Wt. per Gal.	Wt. of Solids per Gal.	Flavors
B B B	36,05 36,05 36,05 36,05	1st 2nd 3rd 4th	674,688 660,375 288,001 101,313	158.06 68.56	4.178	1,506	All Flavors All Flavors All Flavors
	-	Exhibit % of T.	S. of T. Draw	% of T. 8. Draw Total Wt.	Sof T. 8. Draw Total Wt. Of I. C. Total Gal.	S of T. Draw Total Wt of I. C. Total Gal of I. C. Wr. per Gal.	% of T. S. Draw . Total Wt. Of L. C. Wt. per Gal. Wt. per Gal. Wt. of Solids

when a mix of high solid content is used. This table would seem to substantiate the idea.

In Table V, Exhibit C, this is again borne out. We have a low solids mix and a variation of .13 pounds

			TA	BLE V				
Exhibit	% of T. 8.	Draw	Total Wt. of L. C.	Total Gal. of I. C.	Wt. per Gal.	Wt. of Solids per Gal.		Plavors
606	33.01 33.01 33.01	1-t 2nd 3rd	509,00 506,00 165,50	110,00 110,00 33,16	4.600	1,518	All	Flavors Flavors Flavors

per gallon. There is a decrease in yield in the last drawn cream as is the case with the other tables considered.

Exhibit	% of T. S.	Praw.	Total Wt. of 1. C.	Total Gal. of L. C.	Wt. per Gal.	Wt. of Solids per Gal.	Flavors
ABC ABC ABC AB	35.55 34.60 34.61 35.17		1482.126 1355,438 632,314 166,193	311,31	4,354	$\frac{1.506}{1.539}$	All Flavor All Flavor All Flavor All Flavor

Table VI shows a summary of Tables III, IV, and V. It will be noted here that when the three exhibits are considered together we have a quite constant weight per gallon, as well as weight of solids per gallon.

Suggested standards in the past based on weight per gallon have named a figure considerably higher than this table would indicate to be practicable.

Considering a standard based on the weight of total solids per gallon, some authorities have recommended from 1.4 to 1.6 as the desired figure. From these tables it would seem that a 1.4 per gallon would be a reasonable figure for the manufacturer to stay above and at the same time the consuming public would be assured a desirable food product. Just how practical the enforcing of such a standard would be is a question for considerable study.

With a figure as low as 1.4 we find as much as 62 per cent. of the ice cream considered in the three exhibits falling below it. With 1.4 as a standard, it would necessitate a smaller yield in order to keep all the cream safely above the margin. It is true that some of the cream might be pretty heavy and have a tendency toward "sogginess," but a lower percentage of total solids requirement would deliver to the consumer a cream lacking in palatability as well as food solids.

It occurred to me that the variation in total solids per gallon might be due to a variation of solids in the mix. The analysis of the samples taken give us the graph entitled, "Variation of Solids in Samples,"

Exhibit A had a butterfat content of 10.25, Exhibit B of 19.50, Exhibit C of 9.92. All samples were taken at equal intervals during the day's run. The agitating coils were kept rotating continuously during the freezing of Exhibit A. In Exhibit B the coils were not kept rotating continuously during the freezing, but were rotated at approximately three equal intervals. In Exhibit B.

Exhibit A showed only 8 of one point variation in the percentage of lotal solids, while B showed a variation of 1.4 points and C showed a variation of 1.2 points. This does not mean that the coils should be kept rotating, however, for the body of the ice cream must be considered.

I am not yet ready to say that these figures give use enough information to draw any definite conclusions or to suggest any definite standard for ice cream. I do believe, however, that there should be a standard, but the details upon which this standard should be based is also a question for further study.

As a step toward determining a fair and workable standard, I have compiled these tables for your consideration from regular runs of commercial plants. They do not prove anything, but do suggest a few methods of approaching the subject. *As a result of my investigation, I submit for your consideration the figure of I.4 pounds of solids per gallon of ice cream as being within reason from the point of view of solids.

Before California should set a standard, great care should be exercised so that when once adopted it may be practicable and fair to all concerned.

LOSS OF ENGINE POWER

The Motor Vehicle gives the following as the six principal causes for loss of engine power:

 Irregular engine operation which may be caused by improperly seated valves on account of warping or pitting or leaky piston rings; scored cylinders; faulty signition and improper carburetion.
 Loss of compression if engine fires regularly.

2. Loss of compression if engine fires regularly. This may be due to leaky gaskets or packings in the cylinder heads. One of the easiest methods of testing the compression of an engine is to turn the crankshaft over by means of the hand crank with all the compression release cocks closed and spark plugs in place. The degree of resistance to cranking can be taken as an indication of the compression in the cylinders. In a four-cylinder engine first one release cock is kept closed and the other three opened, and the difficulty in turning the engine over noted. Then the first cock is opened along with those of the third and fourth cylinders, and that of the second cylinder closed. The crank is then turned over and the compression in the second cylinder noted. The same procedure is carried out for the third and fourth cylinders and the cylinder with the least compression determined.

- Overheating, due to carbon deposits, poor lubrication, improper carburction or faulty water circulation because of leaks or clogged pipes or passageways.
- Carbon deposits, which result in a loss of engine power by causing preignition, which in turn causes overheating and knocking just as though a bearing was loose.
- 5. A slipping clutch, which is sometimes caused in cases where dryplate clutches are used, by weak springs or by the surfaces of the plates being coated with lubricant so that they slip and do not transmit the power effectually.
- 6. Worn gearset and axle gearing are also responsible for loss of power due to backlash and friction in the worn parts. All other parts which aid in the transference of the power to the driving wheels affect the power consumption when the parts become worn for the reason that worn parts generate friction, and friction is the greatest power consumer known.

GETTING BACK ON THE MAIN ROAD

Large Part of Society Must Learn In Its Own Expensive Way the Consequences of Disregarding the Guide Book of Common Sense

By Joseph R. Noel

Vice-President, Chicago Association of Commerce

From an address delivered at the Annual Convention of
the National Association of Ice Cream Manufacturers

When I was asked to announce the title of this address I was reminded of an experience I had some years ago while on a motor trip, during which we had found the Automobile Blue Book to be a very reliable road guide. At the time in question we were traveling on a very good road from Ithaca to Watkins Glen, N. Y. We had gone only a short distance when we came to a left hand road which we were directed by the guide book to turn on, but it was so unattractive, while the road we had been traveling on and which continued was so attractive that even though our experience with the guide book had been entirely satisfactory, we concluded it was mistaken, and therefore we did not turn off as it directed, but remained on the good road. To our great surprise and disappointment the road continued to be good only a short distance farther, but since we were too proud to admit our mistake and thinking the road we were on might lead to our destination, we continued on this road. Soon it became a bad road, grew increasingly worse and turned in various directions. We wondered if after all we were on a road which went to Watkins Glen. We asked a farmer we met if he could direct us but he could not. The next one we met had never heard of Watkins Glen, although it was only about thirty miles distant. Another had an idea of the whereabouts of Watkins Glen although he had heard of it. The next said he thought we were headed in the wrong direction. We followed his advice only to soon again experience doubt, and in our bewilderment we questioned a woman we met on the road. She directed us to an old man who lived on the top of a hill in the neighborhood, who she said undoubtedly could give us the information we desired. We located this man. His manuer denoted his contempt for the poor judgment we had displayed in straying from the main road, but he gave us directions to get back to it in following which we went in every direction of the compass, seemingly back to previous locations several times uphill and downhill, and eventually succeeded in arriving at Watkins Glen with the loss of several hours' time and a number of miles of unnecessary traveling, all of which could have been avoided had we simply followed the directions given by our guide book.

During the Great War and particularly since the armistice was signed, such a large percentage of so-ciety has disregarded the "guide book" of common sense and economic laws, that we have all gotten off the main road to true prosperty, and after much wandering we have at last consulted our own common sense, (the old man on the top of the hill), and now we are "Cetting Back on the Main Road," which

constitutes the title of this address. That we shall reach our destination of sane and true prosperity I haven't the slightest doubt, and when we do we shall all be much wiser and more determined thereafter to consult our guide book in the effort to stay on the main road.

The classics of literature, art and music have survived the tests of time and have demonstrated their superiority over modern efforts. Likewise basic economic laws have survived the tests of time and have not been changed by modern research. I am confident and insistent in my belief that the world is continually getting better and as Tennyson says in "Locksley Hall"

"Yet I doubt not, thro' all the ages one increasing purpose runs.

And the thoughts of men are widened with the process of the suns."

But yellow journalism, cubist art and jazz music, are not improvement upon the classics, nor will the various "isms" which afflict modern society supplant the inflexible law of supply and demand, or any other economic laws, which like the laws of the Medes and Persians of old are immutable and unchangeable.

The upheavel caused by the Great War was of such gigantic proportions that we could not reasonably expect to be restored for several years. Following a storm, great waters are rolled for a considerable period. Likewise we must expect economic and industrial conditions to be unsettled for a long period after such a great catacysm as we have recently experienced, but as sure as the waters of the sea settle after every storm, no matter how severe, economic and industrial conditions will again become normal, though the time required seems cruelly long and the processes which will bring this result about are severe and painfully slow.

Yes, we are a much sadder and wiser world than we were a little over six years ago and the lessons we have learned will last a long time, but each genration must have its own experience; it is disinclined to follow the advice, or profit by the experience of a previous generation. It must learn in its own expensive and usually sad way the consequences of disregarding the guide book, and the difficulties encountered in getting back on the main roat.

No matter how much we may warn others about rocking the boat there will always be those who insit upon trying the experiment, and no matter how futtle anarchistic outbreaks have always proven to be, until the millennium comes there will always be those who seek to attain their ends by committing some such rada act as the bomb explosion in Wall

Street, which did not affect those for whom it was undoubtedly intended, whose principal result was the killing of thirty-six innocent lives, and the injuring of many others who were in no ways responsible for the conditions against which the explosion was probably recant as a protest. As in all other similar outbursts this one defeated its own ends, and it injured only those—the common people—whose cause those responsible for this outrage claim to espouse.

Basic, economic, agricultural, business, and financial conditions are favorable. Our crops, which are the great source of wealth in our country, are again The railroads which represent our enormous greatest single business industry, are again coming into their own and all thinking people now realize that unless they prosper, our country as a whole cannot prosper. Immigration has started in again, and if the present tide continues we shall once more see a healthy admixture of foreign peoples in our population. Imports are increasing, seeking to restore the equilibrium of international trade and permitting foreign countries to again get on their feet and to discharge their indebtedness to us. World conditions are improving in spite of disturbing surface events. The deep and strong undercurrent, however, is towards stabilization and even in Russia, probably the best (or should I say worst)-example of departing from the main highway. We should not be greatly surprised if they soon get back on the main road. Our fever of extravagant spending, which was a reaction from the self-denial we practiced during the war, followed by a great increase in income by nearly everyone has nearly run its course, as a consequence of which production which was so grudgingly increased when most needed, has only lately overtaken demand. Industries so long diverted to war time requirements are gradually getting back on the main road to the production of peace time necessities.

All these conditions reflect themselves in an easing up of the credit situation and a tendency on the part of interest rates to fall, which doubtless will soon grow more pronounced. The fact that prices began to fall at about the time the Federal Reserve Board increased rates of discount is no mere co-incidence, but only another illustration of cause and effect resulting in a decreased demand for credit coincident with the rise in its price. Thus it will be seen that the increase in interest rates was actually a blessing in disguise and that had it not been imposed conditions would have steadily grown worse. Speculation would have continued to run riot. Wages would have continued to mount. Prices would have continued to pyramid, and the vicious circle would have ended in utter chaos for all of us. The brake which was applied by the Federal Reserve Board was effective and if there is any criticism it should be because the brake was not applied soon enough, but we must bear in mind that our own Government is a very heavy horrower, and the Treasury Department influence in the Federal Reserve Board was sufficient to keep interest rates low in order to permit the Government to float its own obligation at low interest rates.

We have every reason to look hopefully for a revision of the Federal Revenue laws to apply to our profits and income for the year 1921 and thereafter. So it would appear that tax legislation will also soon get back on the main road.

Prices are falling rapidly. Already this change is almost as great as it was during the Panic of 1907 and yet all authorities agree that there is no prospect of panic now. While none of us can forecast to what level prices will fall on the present downward swing, it seems reasonable to believe that they must go lower, and when buyers now hesitating to buy on a falling market, are convinced that prices have reached a proper level, then they will again begin to buy, which may cause an increase of prices of more or less temporary nature. There will be very few tears shed over losses that unconscionable profiteers sustain by reason of these falling prices. but it is well to remember that in this case the just must suffer with the unjust, and most of the reputable houses engaged in nearly every branch of commerce and industry are feeling the unfavorable effects of this movement, made worse by wholesale cancellation of orders.

As I see it, the greatest problem of a fundamental character which business in this country is confronted with today is the cost of labor.

In this country everybody is guaranteed equality in the eyes of the law and equality of opportunity. but those who contend that man's muscle was ever intended to be worth as much as man's brain, or that man should not profit by the exercise of good judgment and should not suffer as the result of poor judgment, ought to consult the old man on the top of the hill with a view of getting back on the main road. The Creator never intended that we should be equally talented or efficient, no more than he intended that all apples should be of the same color, size, shape or quality. For some years society has given various theorists a fair hearing, and has tried out to its sorrow some of the half-baked ideas advocated by them, such as government operation of the railroads, but society is anxious to get back on and to stay on the main road.

There is no country on earth where the love of fair play and the square deal exists, or one where so much is done for the unfortunate, the poor, the downtrodden, the underprivileged, the delinquent, and even the criminal, as in our own United States, and experience has amply demonstrated that all substitutes advocated by false prophets for our form of government because of the comparatively few disadvantages we experience, cannot and will not take root upon the soil of the nearest approach to a "government of the people, for the people, and by the people" which exists on earth.

Yet in spite of these things labor has assumed an unenviable attitude, due no doubt principally to false prophets within its own ranks, and has pursued policies which will not stand the tests of time. It is only natural for human beings to become intoxicated with power or authority, and during the period that labor has been in such great demand, unfortunately it has gotten off the main road to

true prosperity by adopting unreasonable and autocratic methods contrary to economic laws. Perhaps the most difficult readjustment of our present reconstruction period will prove to be that of getting labor conditions more nearly in line with all other conditions, and to eliminate the disproportion in the share of profits which now exists in certain quarters, flagrant examples of which doubtless all of you are familiar with.

We are undergoing great changes. Your own industry has seen a great change of sentiment toward the use of your product which formerly was regarded as a luxury, now everywhere recognized as a food product of great value. Only a comparatively few years ago no less an authority than William Osler, who up to the time of his death was regarded as one of the leading medical experts of the times, attributed much indigession and other gastric disturbances to the use of ice cream, but "truth is eternal and will prevail" and we now regard ice cream as one of the best articles of food, not only for the well, but also for the sick.

In spite of the appalling loss of human life, the terrible suffering and misery, the enormous destruction of property and the great upheaval of conditions caused by the Great War, to be followed by the difficult period of reconstruction and readjustment which we are now going thru—in spite of all thesemuch good will result from the War. Among the many changes for the better we shall find that our horizon has been extended, our vision has been broadened, our understanding has been increased, and our sympathy with those who are confronted with great problems has been quickened.

We are in a new epoch. Conditions are not the same as they were before the war, whether they be political, industrial, social, economic, or whatnot. As someone has said, a new day brings a new duty. We are in a new day of progress and ever increasingly we must realize that this new day has brought us many new duties. We must acquire a conception entirely unlike anything we have had in the past (among other things) of duties of our citizenship, especially so since we must now undertake to Americanize not only the new immigrants who are coming to our shores, but also many who have long been in our midst, including large numbers of American born people, who have been neglected through perfectly natural causes, for which nobody seems to blame.

"One half of the world doesn't know how the other half lives." Most of us are absolutely ignorant of the conditions which prevail in the intimate life of the lower classes of society. It is up to us take the initiative in order to determine what these conditions are. It is our job to make an effort to improve these conditions. Our forefathers left us a heritage of great wealth and great opportunity, but he who thinks that wealth and opportunity are not accompanied with a proportionate degree of liability and responsibility is on the wrong road and the sooner he learns that he cannot get something for nothing, the sooner will he get back on the main road.

In former years on account of the small percentage of foreign born people in our midst, it was a comparatively easy matter for our forefathers to assimilate them, and to get them acquainted with our customs and ideals, but now since the percentage is so large, we must redouble our efforts to carry on the work of our forefathers by helping these people to become useful American citizens. Since actions speak louder than words, if what we say to these men is to have any effect, if we expect any degree of success in the effort to make them useful American citizens, we must each and all realize the responsibility which automatically attaches to our individual prosperity. We must fully grasp the significance of the power of our own example and each individually get back on the main road in the performance of the simple duties of citizenship such as voting and jury service from which all too great a number shirk.

If we, as well as the newcomers, are to enjoy the privileges of our republican form of government and all the rights and privileges that attach to citizenship, we as well as they must be impressed with the necessity of discharging the duties of residence and citizenship in this country.

CONDEMNS SUBSTITUTES

At a recent meeting of the Board of Directors of the New York Milk Conference Board, consideration was given to the practice claimed to exist in some quarters under which certain dealers in cream have been accused of substituting vegetable oils, principally cocoanut oil, in place of butterfat. Since such practices are, in the opinion of the Board to be condemned, the following resolution was adopted:

WHEREAS, it has come to the attention of the Board of Directors of the New York Milk Conference Board, Inc., that some dealers in cream are reported to have offered for sale a commodity in which vegetable oils have been substituted for butterfat, and

WHEREAS, this Board believes that the trafficking in such a commodity is not only in violation of the law but prejudicial to the best interests of the trade and detrimental to the public health.

THERFORE BE IT RESOLVED, that this Board does strongly uge that no member of this organization indulue in such practice and that every member dealing in cream exercise every possible care to see that all cream purchased is free from such adulteration and in strict conformity to the legal requirements, and does hereby commend the action of the Commissioner of Health of the City of New York in vigorously opposing the perpetration of this fraud upon the consuming public.

DISTRICT MEETING IN IOWA

A district meeting of the Association of Ice Cream Manufacturers of lowa was held at Spencer, Friday March 11. The meeting was called for the purpose of discussing prices, express rates, service and other details in regard to that business. Among those present were the president, W. S. Wilcox, and secretary, P. W. Crowley, of the Association of Ice Cream Manufacturers of Iowa. There were also representatives from Storm Lake, Emmetsburg, Sheldon, Pocahontas, Algona, Hartley, Ft. Dodge, Estherville, Sjoux Rapids, Humboldt and Spirit Lake.

THE ICE CREAM TRADE JOURNAL

A practical helper for Ice Cream Manufacturers and a chronicle of trade evenia.

Published Monthly by THOMAS D. CUTLER

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Have You Any Square Pegs In Round Holes? When, due to the war, the employer was wrestling with the employment problem it was a catch as catch can proposition

and he had little choice in the matter of picking the personnel of his business. And this trouble was not ended with the signing of the armistice; it is only within the past iew months that changing conditions have placed the employer in a better position from an employment standpoint.

The labor turnover, an expensive item in any business organization, is necessarily a large item in a seasonable business—and that the ice cream business will always be, for although the winter volume is on the increase it will never cqual that of the six or eight months from April to the first fall frost. Therefore, the problem for the ice cream manufacturer is to build up and maintain a permanent organization that can be expanded in the busy season without loss of efficiency; and this can more readily be accomplished when each man is picked for his job and throughly trained to swing it.

It is rightly said that the success of any business enterprise rests on the ability of the employer to pick the right man for the job and after the inan is on the job to see to it that he is guided by careful training to a thorough understanding of his work.

If all men were alike the problem of the employer would be lessened. As it is men and hove may be classed under two heads-those who teach themselves and those who must be taught. The former have the faculty of gaining knowledge without the aid of others while the latter class depends upon instruction for their education. In the choice and training of employees this thought should be kept always in mind, and though a man may seemingly be dead on the job assigned to him he should not be judged too harshly until the employer has done his part. He may even be a misfit in the department in which he has been placed, and still have it in him to become a valued unit in the organization if the place where he does fit is found for him. For example, some ice cream salesmen would make better freezer men and vice versa. Some men are wholly ineapable of placing themselves, of recognizing their own abilities and limitations, yet are high-mark men when they are properly placed. Recognition of this truth has in many instances enabled employment managers of the modern school to reduce labor turnover.

It may be true, as Thomas Edison says, that if a man is dead mentally at twenty-one there is no hope for him. But he might be asleep mentally at that age and still have a useful future. It is not always those who develop most quickly who make the best men in the long run, nor always the bright youth who becomes in the end the nearly indispensible cog in a big machine.

Chance, opportunity to get on a pay-roll—any payroll—rather than strong inclination or special aptitude for a particular job determines occupation for the majority of workers. Therefore—and apart from any question of uplift or workers' welfare—it is up to the employer to pick and place his men and if he find a square peg in a round hole to shift him. It may be easier to fire a man than to find the place he fits, but as a rule it is also more costly.

TO URGE GENERAL SALES TAX

Plans for a vigorous campaign of education in every congressional district of every state, on behalf of a general sales, or turnover tax, similar to that already in operation in the Philippines, in France, and elsewhere, as a substitute measure for the present burden of "unwise taxation," are announced by The Tax League of America, Inc. The head-quarters of the League is located at 1270 Broadway, New York, and the officers are: President, Hagen J. Burton, of Minneapolis; vice-president, John Williams, of New York; executive vice-president, Major Henry G. Opdycke: treasurer, Jules S. Bache; chairman of the executive committee, Judge Lebbus R. Wilfley, former Attornov General of the Philips.

pines, of New York. The Advisory Board is composed of prominent manufacturers, merchants and bankers from all parts of the country.

President Burton outlines the advantages of the advocated plan of taxation as follows:

Nowithstanding the complete breakdown of the present system of taxation the tax experts who devised it now propose to continue it in operation with some revisions and exemptions. But revisions and exemptions will not meet the situation. A better, simpler and wholly new method is required, and the business man must lend his business experience in solving his own tax problem. Effectively to aid the return of prosperity in this country we must promptly lift from the shoulders of business the blight of the present method of taxation by substituting therefor a general sales tax. It has been calculated by some of our soundest thinkers that a sales tax of 1 per cent. on all business turnovers would return at least \$2,000,000,000 in revenue annually. This amount, plis that derived from a moderate income tax and other existing sources of revenue, would furnish more than the \$4,000,000,000.

quired each year by the Government.

Although four billions of revenue from taxes is now necessary each year for Government operation, this in itself need not criple business or stille initiative, provided the method of levying and collecting this amount is improved. At present we pay taxes under a process which is unnecessarily bungle-some, burdensome, inequitable and, since the war,

inadequate.

Concretely, the advantages of a general sales tax are: It will undoubtedly produce all the revenue needed; under it the flow of revenue will be prompt, constant and dependable; it will be paid by the whole body of the people, but in infinitely small amounts by each individual; it is simple in operation, and will be promptly, completily and economically collected without burdening any one, when simple-collected without burdening and will be promptly get back on its feet and prosperity return; it will reduce the high cost of living without reducing the profits of the producer.

Commenting on the plans and proposals of the Tax League, the New York Times says:

Education regarding the principle of the sales tax is less necessary than regarding its details. is needed now is the proposal of a definite bill for the purpose of its betterment through examination and criticism. It ought not to be overlooked that we already have the worst sort of sales tax and that its authors are leading oponents of the plan to substitute a general, better sales tax for theirs-discriminatory, uncertain, unproductive and easy to evade as it is. These adjectives are mostly those used by the Secretary of the Treasury in urging amendments which afford good examples of what to avoid in the new sales tax. He names for repeal Section 630, taxing sales of fountain drinks, ice eream, and similar articles of food and drink. There can be few buyers of those articles who have not doubted whether the tax was fully paid or always received by the Treasury. The methods are so slipshod that the sellers cannot know whether or not the buyers ought to pay, and therefore cannot know what they ought to pay to the Treasury.

The proposers of the general sales tax have foreseen this difficulty and have provided for a system of licenses to enforce a system of accounting which should assure the Treasury of receipt of its dues. The unpopularity of the existing sales tax is due to its faults, and its authors are proposing to amend it in an approach to the general sales tax by enlarging the classes of articles taxed. It is better to go the whole way and enact a sales tax to include everything except transiers of capital and assets, such as sales of real estate and interest of the sales of real estate and requirities. They are not consumable goods and the question of who is a consumer of them does not arise. If consumable goods are sold several times, there is no sufficient reason not to tax each sale, for the tax is so moderate that its cumulation will not be burdensome, and therefore the restriction of sales for the sake of evasion of the tax is little to be feared. The perfection of the measures in such details is the sort of education now needed.

LABOR'S BILL OF RIGHTS

A. R. Marsh, an economist, gives the following view of labor's "Bill of Rights," in a recent issue of the Economic World:

The Washington convention of delegates from 109 mational and international labor unions, held the latter part of February, set forth their opinions and conclusions in a document which is called by the press "Labor's Bill of Rights." The "Bill of Rights asserts: "Labor not only insists upon maintaining their present standards of wages and working compared to the present standards of wages and working compared to the present standards of wages and working compared to the present standards of wages and working compared to the present standards."

Organized labor is imagining a vain thing if by present standards of wages it means the money rate of wages that have been secured during the past two or three years. A sharp reduction in money rates of wages is certain in the near future, not primarily because the employer wishes it, but because the consumer cannot buy products of industry at prices containing the present exorbitant labor costs.

The present depression in American industry and lack of employment for 3,500,000 industrial workers is not due to maladministration of industry, as the 'Bill of Rights' asserts, but is directly due to the impossibility of finding markets on the present price basis. No return to industrial activity can be expected until money wages are so lowered that price and the consumer.

The construction of the anti-trust laws, as applicable to the efforts of the unions to keep the products of non-union businesses entirely out of interstate commerce, base caused bitter criticism of the "re-cactionary" Federal Courts by many spokesmen of the labor unions. It is hard to believe that the unions or northrow our Federal Courts, either by legislation or otherwise.

MILK COWS DECREASE

The United States Department of Agriculture estimates 10,000,000 head less of live stock on the farms of this country January 1, than on that date a year

Dairymen and dairy interests are the most interested in milk cows, which are said to have decreased 298,000 head during the year, the total January 1, this year being 23,321,000 head for the whole country.

The total value of live stock declined \$2,271,576 or 26.7 per cent. during last year. Milk cows declined from \$85.11 per head to \$63.37 and from a total value of \$2,010,128,000 to \$1,491,900,000 or 25.8 per cent.

Money is merely a commodity and it is not so much what you can afford to pay for its use as what you have to pay. What you expect to make out of the money gives an easy guide as to what you can afford to pay.

CORRESPONDENCE

Ice Cream Standard Situation in Ohio

Editor THE ICE CREAM TRADE JOURNAL.

The Kryder Bill, as originally written, contained several objectionable features. It called for twelve per cent. butter fat without any provision for other solids; it specified a weight of 5½ lbs. per gallon and contained an acidity clause. It also provided for licensing manufacturers, to which, however, we offered no objections. We succeeded in having the bill amended in the Senate to eight per cent. butterfat with total milk solids of twenty per cent. and the weight provision reduced to 4½ lbs.

The present General Assembly is composed largely of farmers and it is this element which is behind the Kryder Bill.

At the last meeting of the Ohio Association we d cided to ask for legislation governing the sale and manufacture of ice cream in Ohio and providing for an eight per cent. milk fat standard. A committee of producers asked permission to discuss this question with us and we agreed to meet them. A joint meeting was held of a committee from our Association and the producers Association, and after deliberating for ten or twelve hours finally evolved a bill which was suitable to everyone present. During the interim, however, of the annual meeting and this joint conference, two bills were presented in the present General Assembly; one calling for a ten per cent, standard and the other a twelve per cent. standard. The regulations recommended by the National Association were used as a guide and would have been preferred by the manufacturers, but it was deemed advisable to take some of the best features of the other two bills and incorporate them in our bill. We had hoped to have our bill substituted for the two bills which had already been presented, but dissension arose in the ranks of the producers and the work of their committee was repudiated. This necessitated a fight on our part, and as it was impossible to have a new bill substituted, the best we could do was to get such amendments as we felt would make the bill the least harmful. As amended the bill is not entirely satisfactory, but it is very much less onerous than it was originally. The bill is now in the House and we understand an effort is being made to have it changed there to ten per cent. on the promise if it is returned to the Senate with this change it will be adopted. This promise, however, we do not think will be realized; in fact, we believe we have a very good chance to have it adopted in the House as it now stands.

The licensing feature provides for a fee of \$1.50 per gallon of freezer capacity per year; in other words, \$15.00 for each ten gallon freezer.

It seems a pity that the various branches of the dairy industry cannot work in harmony. These bills were prepared by representatives of the producers and a very strong effort was made by them to have the twelve per eent. bill adopted. Endorsements were obtained from dairy and farm organizations throughout the state. The belief was (and no doubt many farmers are sincere in this opinion) that the higher the butter fat of ice cream the more dairy products will be used. They seemed unwilling to accept the statement of the manufacturers, that it would have just the opposite effect; that this would involve a higher price, and in these times, necessarily a reduction in consumption; therefore, a reduction in the amount of dairy products used instead of an increase.

In committee meetings and on the floor of the Senate slurs were made upon the ice cream industry and aspersions cast upon the quality of the product and the honesty of the men in the business. The use of butter and milk powder was severely condemned by the author of the Senate Bill, who, himself is a farmer. He must be very short sighted indeed, who does not realize that the manufacture of milk powder and condensed milk is a boon to the dairy industry; that if these products were not made the farmers would realize very much less for their milk than they get at present. Such attacks by men engaged in the dairy industry weaken our cause and open the doors wide for the invasion of substitutes.

It seems high time that the leaders of the various branches of the dairy business get together and work for the common cause of a greater use of dairy products and present a solid front against substitutes of every description. There is no good reason why farmers or farm organizations should be antagonistic to the ice cream industry, nor that they should interest themselves in the question of a standard, as long as only pure, wholesome dairy products are used. They have a perfect right to protect, with all the forces at their command, against the use of substitutes, but should not raise their voice in protest against the use of any pure dairy products; neither should they endeavor to dictate what is a good, wholesome, palatable commercial ice cream. That is a question for food and health authorities and ice cream manufacturers to determine.

J. J. SCHMIDT,

General Manager, The Cline Ice Cream Co., Athens, Ohio, March 30.

Arkansas Company Makes Sugar Survey

Editor THE ICE CREAM TRADE JOURNAL:

Some time ago we sent out letters to a number of people in nearly every state in the Union, asking their opinion as to the probable price of sugar this season. You very kindly replied to this letter, and believing the result of our investigation might be of interest to you we have tabulated the result of the replies received, showing the general trend of opinion in the matter.

In answer to the question "Do you think the price of sugar will advance?" 91 per cent, replied yes, and 9 per cent, replied no. In reply to the question "How much do you think it will advance?" the replies ranged from 1 cent to 4 cents.

In reply to the question "Do you think the price of sugar will decline?" 12 per cent. replied yes, and 88 per cent. replied no. Those who predicted decline thought it would be slight. Several expressed the opinion that sugar would advance until June, and would then react.

With very few exceptions, all advised buying as needed, or not more than a 60 day supply.

We trust that the above figures may be of interest to you.

WILL TERRY,

President, Terry Dairy Co. Little Rock, Ark., March 24.

A Suggestion from New Jersey

Editor THE ICE CREAM TRADE JOURNAL:

A suggestion for the trade in general: Loganberry lee Cream, a wonderful repeater and a trade getter, made from the preserved fruit with a little extract.

For the interest of all.

B. E. BOGART,

Treasurer, Bogart's Ice Cream Co. Paterson, N. J., March 21.

Credit Information Benefits All Concerned

Editor THE ICE CREAM TRADE JOURNAL:

The writer believes that he is giving you an idea here that, if properly handled in your columns, will do a vast service to all of your advertisers as well as the ice cream trade.

The average ice cream manufacturer seems to think that a manufacturer of supplies or equipment is questioning his honesty when asking for credit references or information that will enable them to extend credit. Also, they refuse, many times, to furnish Dun and Bradstreet with any information, thus making it impossible to give them a proper rating.

Many times customers are refused credit when they really are entitled to it, simply because there is no information available and if they are asked to furnish information, they resent it.

Oftentimes insufficient information causes delays and cancellations.

If the ice cream man could be made to realize the injustice he was doing himself by not putting himself out to establish credit when placing an order, he probably would reverse his methods.

V. H. R.

TRI-STATE MEETING

The Tri-State Association of Ice Cream Manufacturers of Georgia, South Carolina and Alabama held its annual meeting on March 9 at Savannah, Ga. Over thirty manufacturers attended and took part in the discussions of business conditions in the industry.

Officers for the coming year were elected as follows: President, M. J. Costa, Athens, Ga., vice president, J. D. Kannette, Macon, Ga.; secretary-treasurer, John Sancken, Augusta, Ga.; board of directors: Fred Scanling, Atlanta, Ga.; R. W. Freyschmidt, Charleston, S. C.; Joseph Flowers, Thomasville, Ga., and S. B. Breedlove, Valdosta, G.

Atlanta, Ga., was chosen for the 1922 meeting of the Association.

BOOK REVIEW

Management of Dairy Plants

"Management of Dairy Plants" is the title of a book jinst published by The Macmillian Company, New York, N. Y. Its author, M. Mortensen is Professor of Dairying at Iowa State College, Ames, Iowa. Quoting from the preface the author states that: "The large portion of the material presented in this book has been collected by the author during the fourteen years while he was engaged in commercial dairy work. Midth has also been obtained from the experience of others. The author has during the past ten years taught the subject of creamery management to students, and the material presented in this book has been given to the students in the form of lectures."

Apparently written for the managers of plants manufacturing butter, ice cream and other dairy products, "Management of Dairy Plants," nevertheless should be helpful to an executive of an institution manufacturing ice cream alone. The book covers both the mechanical and business end of a dairy manufacturing organization and subjects in chapters entitled, "Creamery Construction." "Sewage Disposal." "Refrigeration." "Purchase of Milk and Cream," "Cost of Power" and "Pasteurization" are of vital interest to manufacturers of any dairy product. Likewise chapters dealing in subjects such as "Marketing Dairy Products," "Advertising Dairy Products," "Business Correspondence," "Credit and Collection," and "Creamery Bookkeeping" should demand the attention of managers seeking to broaden their business vision.

One chapter dwells wholly on the subject of ice cream. It is entitled, "Profits obtained from the manufacture of ice cream" and in 21 pages a number of subjects pertaining to ice cream are discussed under three subheads, namely, "Cost of Material," "Yield of Ice Cream," and "General Expenses in Manufacturing Ice Cream,"

A chapter on advertising dairy products deserves special mention in that the combined efforts of two authorities have been excreted to place before the reader the principles of advertising as applied to dairy products. When preparing this chapter the author enlisted the efforts of Professor F. W. Beckman of the Department of Agricultural Journalism of Iowa State College and the author in his preface makes acknowledgment to Professor Beckman "for his valuable assistance, particularly with the chapter on Advertising, which was largely written by him."

Acknowledgment is also made by the author to Professors B. W. Hammer, A. W. Rudnick and M. R. Tolstrup who have assisted in this work.

There are 24 chapters in "Management of Dairy Plants," covering 358 pages. The book is illustrated by 36 figures, 43 forms and 25 tables.

NEWS OF ICE CREAM FACTORIES

Readers are requested to send for this department authentic news of intention to build, improve or add equipment to plants; changes in control, and other items of interest about plants and the business.

CHINA

Hongkong—The On Lok Yuen & Co., Ltd., is equiping a factory for the manufacture of ice cream and
candy. The company's general manager, Cheung
Kat Shing, is now in the United States. Mr. Cheung
after making a tour of the Western Coast factories,
purchased approximately \$20,000 worth of ice cream
equipment from the Davis-Watkins Dairymen's
Manufacturing Co., at San Francisco, through the
Shantung Trading Co. Mr. Cheung recently left for
a tour of the Eastern States before returning to the
Orient. This factory is said to be the first ice
cream balant in China.

ALABAMA

Atalla—The Lakeview Ice Cream Co. was recently organized by Max F. Stowers and Joe N. Cooper. A new plant is being constructed for daily capacity of 4,000 gallons. Mr. Stowers is also owner of the Atalla Dairty which will furnish the cream for the new plant.

Dothan.—J. W. Batchelor & Son are reported to have recently purchased the Moore Ice Cream Co.

Hope.—E. N. Garrett of Clarksville is planning to establish an ice cream factory here.

CALIFORNIA

Exeter.—G. H. Wilcox, proprietor of the Candy Shop, has leased a new building in which he plans to install an ice cream plant. He plans to manufacture ice cream for the wholesale and retail trade.

Los Angeles—The L. J. Christopher Company was recently re-organized being incorporated for \$1,000,000. The officers of the new organization are: President, L. J. Christopher; vice-president and general manager, A. A. Comey; secretary-treasurer, W. A. Martin, and factory manager, T. E. Chapman. Mr. Comey states that the Christopher plant has been remodeled at a cost of \$100,000 and in addition to this the company is having plans drawn for another new building which will be erected on property adjoining the present factory and which in all probability will involve an expenditure of approximately \$200,000. Equipment installed will include a 100-ton ice plant.

Oakland—The Dryden Corporation recently took over the business of the Dryden-Humphrey Co.; Robert J. Dryden through the reorganization taking over the Humphrey interests. Mr. Dryden is president and general-manager of the new corporation while R. C. Perkins is secretary and treasurer. The new company has purchased a two-story brick building, 80 by 160 ft., formerly occupied by the National Biscuit Co., at 3998 San Pablo Ave. The new plant will have a daily capacity of 3,500 gal. of ice cream will have a daily capacity of 3,500 gal. of ice cream

and included in the new equipment will be a 20-ton refrigerating machine and a 10,000 gal. hardening room. All the equipment in the plant will be furnished by the Creamery Package Mfg. Co.

San Francisco—The Valley Ice Cream Co. is reported to have been incorporated for \$100,000 by C. O. Swanberg, C. W. Hightower, Jr. and W. Dreyer.

CONNECTICUT

Hartford—The Ce Brook Ice Cream Co, has been incorporated with a capital stock of \$50,000 with the following officers: President, John J. McNalley; secretary, C. Henry Bletzer; treasurer, Robert Glaser, and general manager. George A. Maryott.

DELAWARE

Laurel—The Delaware Ice Cream Co. has been incorporated for \$25,000 by B. Guy Wheatley, Seaford,
Del. and Russell M. Brown, L. Hubert Wright,
Laurel,

ILLINOIS

Aledo-R. B. Le Master, proprietor of Le Master's Bakery, recently installed a 60-qt. Miller ice cream freezer and other equipment for the manufacture of ice cream for the wholesale trade.

Blue Island-The Cavallini Ice Cream Co. has been incorporated for \$100,000 with the following officers: President and treasurer, Peter Cavallini; vice-president, D. Cavallini, and secretary, Emil Blott. The company recently installed a modern ice cream plant in a two-story building, 30 by 90 ft. The freezing and shipping room is on the first floor. The floor of the freezing room is covered with mosaic tile and this department is equipped with 4 brine freezers. The refrigerating equipment consists of a 12ton capacity ice plant, two 12-ton compressors with high side complete, hardening room of 4,000 gal. capacity and cold storage, 10 by 20 ft. The mixing room is on the second floor and is equipped with a homogenizer, Alaska cooler and four 300-gal. Wizard mixing vats. A laboratory equipped with Mojonnier apparatus is also located on the second floor. One 30-ton salt bin and the boiler equipment is located in the basement.

Chicago-John T. Cunningham is making extensive improvements in his factory on West Van Buren street, which will increase its annual capacity to two million gallons. To the present brick structure and conforming with it, architecturally, there is being added a 2-story extension, 125 by 125 ft. in area This will give the completed building a frontage of 217 ft. on West Van Buren street and 125 ft. on Irving avenue, with a truck room 150 by 54 ft. and a loading platform 155 by 16 ft. Additional refrigeration, for ice cream work and to make 75 to 80 tons of ice daily, will be produced by two 75-ton York compressors of the enclosed type with synchronous motors, installed by Westerlin & Campbell, Another feature of the new equipment is a battery of twelve 80-at. Miller freezers. All told the improvements will require an additional investment of about \$300,-000. To improve delivery service Mr. Cunningham will maintain a big fleet of White motor trucks, believing that best results are obtainable in this department as in others through standardization.

Danville-The R. W. Furnas Ice Cream Co. has increased its capital stock from \$6,000 to \$24,000.

Danville—The Velvet Iee Cream Co. has changed its name to the Cherry-Prast Iee Cream Co. Messrs.

Cherry and Prast have added all new equipment. Freeport—John Wagner, ice eream manufacturer, recently remodeled his plant doubling the hardening room capacity and installing new equipment including two Davis-Watkins 50-qt. freezers, mixing vat, can washers and a 10-ton Baker ice machine fur-

nished by the Burg Machine Co. of Chicago. Oak Park—The Traill & Cooling Ice Cream Co., 208 Madison st., is installing new machinery including two glass lined holding tanks of 680 gal. each and a Mojonnier batch tester and a Mojonnier overrun tester.

Rockford—The Crescent Iee Cream Co., 416 E. State st., is installing a 10-ton Baker ice machine. The company recently added a 2-ton Stewart truck to its delivery equipment.

South Chicago—The South Chicago Ice Cream Co. has purchased additional equipment and fifty feet more frontage on which it will build an ice house including a new ice conveyor. The company recently added a new 5-ton Old Reliable truck to its delivery equipment.

INDIANA

Lafayette—The Bohrer Products Co. contemplates installing additional equipment in the near future.

Des Moines—The Furnas Ice Cream Co. has added to its York refrigerating equipment one 15-ton vertical single-acting belt-driven enclosed refrigerating machine and high pressure side complete.

Estherville—R. N. Rousseau, formerly of LeMars, Iowa, is reported to have opened an ice cream plant here.

Maquoketa—J. J. Marouses is remodeling his plant building in new milk storage and hardening rooms and adding new machinery including a 50-qt. horizontal Perfection freezer, one 100-gal. Perfection mixer and pasteurizer and a 6-ton Harve ice machine.

KENTUCKY

Louisville—The National Ice Cream Co. has purchased the ice cream business of the Gray Von-Allimen Sanitary Milk Co., of this city. The latter company will continue in the milk and butter business.

Louisville—The Harmon Iee Cream Co., 439 S. 8th st., has let a contract to F. E. Byrne of this city to construct a 1-story, 60 by 30 ft. iee cream factory. R. L. Harmon, manager of the company states that the building will eost \$4,000 and refrigerating machinery and hardening room about \$5,000.

Louisville—The Cusaden Ice Cream Co., 619 S. 2nd st., has contracted with the Sanitary Milk Machinery Co., for the installation of a 20-ton York refrigerating machine complete.

LOUISIANA

New Iberia—The New Iberia Ice & Bottling Works, J. C. Christian manager, comtemplates installing machinery to manufacture ice cream. MAINE

Biddeford—The Coon Ice Cream Co. of Burlington, Vt., will soon open a branch plant here. The Deering building at 378 Main st. is being remodeled and equipped with an up-to-date ice cream plant. This is the seventh New England plant which the company is operating.

MASSACHUSETTS

Lowell—The Cameron Brothers Ice Cream Co., has been purchased by Wm. A. O'Malley and Eugene F. Callahan. The final papers of the transaction were passed March 18, 1921.

North Adams—The Berkshire lee Cream Co., recently reorganized, has purchased a building which will be remodeled into a modern jee cream plant.

Worcester—Tait Bros, of Springfield, Mass, are building a new plant her. The new factory will be 60 by 100 ft., three floors and basement, and will have a daily capacity of 5,000 gallons of ice cream and 50 tons of ice. Practically all new machinery will be installed will be furnished by the Creamery Package Mg. Co. The company expects the new plant to be ready for business about July 1.

Grand Rapids—The Kelly Ice Cream Co., 110 S. Ionia st., has added to its refrigerating equipment a 15-ton York refrigerating machine eomplete.

Jackson—The American Ice Cream Co. recently installed a new freezer. The company will add another freezer in about 6 weeks making three in all and will double the capacity of its hardening room before the busy season.

Kalamazoo—The Blue Ribbon Ice Cream Co. has moved into its new plant. The new factory has a capacity of 2,000 gallons per day with a hardening room capacity of about 10,000 gal.

Ovid—The C. A. Connor Ice Cream Co., of Owosso, Mich., is establishing a creamery and condensery here. The company states that this plant is located in the center of a very good dairy district and that all the ice cream mix for the eompany will be made at this point and shipped to its several braneh factories. The plant will be concrete and brick construction, 60 by 90 ft., without the power plant and well equipped for making ise cream mix and other dairy products.

Port Huron—James Wilson & Son, who own and operate the Wilson lee Cream Co. is installing new additional equipment including a can washer, brine cooler, milk cooler, freezer and mixing vat. The company recently purchased the Roseburg Creamery at Roseburg and will operate it as a country plant to supply the Port Huron plant.

Saginaw—The Williams Iee Cream Co. is adding to its equipment a new ice eream freezer, one new 15ton York refrigerating machine and one new 15 h, p, boiler.

MISSOURI

Farmington—The Schramm Bottling & Ice Mfg. Co. recently changed its name to the Schramm Bottling & Creamery Co., having incorporated for a capital stock of \$60,000 fully paid up. The business will be conducted as heretofore under the same management and with the following officers: President

dent and general manager, F. W. Schramm; vicepresident, Henry A. Schramm, Jr., and secretarytreasurer and assistant manager, Chas. P. Braun.

St. Genevieve—H. C. Petersen has installed in his ice cream factory one 10-ton vertical single acting belt driven enclosed refrigerating machine and high pressure side complete, also a 25 h. p. Fairbanks, Morse & Co. engine.

NEBRASKA

St. Paul-The Farmers' Creamery plans to install an ice cream plant as a department of its factory.

Newark—The New Jessey Ice Cream Co. recently installed a 30-ton raw water flooded York freezing system, one 20-in, by 7 ft. vertical ammonia drier-cooler-purifier and other refrigerating equipment.

NEW YORK

Buffalo—The Wheat's Ice Cream Co., 235 Elm st., has increased its capital stock from \$75,000 to \$1,500,000.

Elmira—The Hygeia Ice Cream Co. has been incorporated with a capital stock of \$\$50,000 with the
following officers: President, H. C. Way; vicepresident, J. R. Schoemaker; secretary, W. T.
Keaton; treasurer, George W. Brooks; manager,
R. A. Perry, and factory manager, M. I. McInerney. The new company has leased space in the
plant of the Hygeia Refrigerating Co. which will
supply the refrigeration and power. Modern equipment is being installed including a 500-gal. Jensen
pasteurizer, mixers, holding vats, a battery of Miller
freezers, a viscolizer and full Mojonnier testing
equipment.

New York—The Marel & Feldman Corp., 863 Hornaday Pl., Bronx, has been recently incorporated with a capital stock of \$75,000 by M. Dworetsky, G. and J. Marel to manufacture and sell ice cream.

New York—The Pure Food Ice Cream Co., 501 Lenox ave., has been incorporated for \$10,000 by J. E. Higdon, C. E. James and C. H. Anderson.

New York—The J. M. Horton Ice Cream Co., has installed in its Harlem plant at 125th st. and Harlem River one 50-ton vertical single-acting high speed enclosed York refrigerating machine with motor and Turbo-gear drive and other refrigerating equipment.

Norwood—The St. Lawrence Ice Cream Co., which bought out the Norwood Ice Cream Co. last year, did not, as previously reported, consolidate with the Gouverneur Ice Cream Co. of Ogdensburg. and Community Ice Cream Co. of Ogdensburg. L. B. LeFrancois, manager of the St. Lawrence Ice Cream Co., states that his company plans to install a plant at Ogdensburg in addition to the company's plant in Norwood.

Portville—The Portville Ice & Cold Storage Co, a new firm organized to manufacture ice and ice cream, has opened a new plant equipped with the latest machinery including a 20-ton and 5-ton enclosed type York refrigerating machines complete, both motor driven. E. C. Nagle, secretary-treasurer of the company states that the new plant

will have a daily capacity of 20 tons of ice and-500 gal. of ice cream.

Potsdam—The Bullard Cream Co. has been incorporated with a capital stock of \$50,000 with the following officers: President, F. L. Cubley; vicepresident, O. P. Benson; treasurer, I. H. Kendall; secretary, Dr. D. F. Burge, and general manager, H. A. Bullard. The new company is installing a plant for a capacity of 1,000 gal. of ice cream per day.

Poughkeepsie—J. Schrauth's Sons are making extensive improvements to their plant by adding two floors and two hardening rooms. This will double the capacity of the present plant. May 1 this business will be fifty-five years old.

Watertown—The Bullard Cream Co., of Potsdam, has leased a part of the Consumers Brewery in which it plans to install an ice cream plant with a capacity of 2,000 gallons of ice cream a day.

NORTH CAROLINA

Burlington—The May Ice Cream Co. recently increased its capital stock from \$25,000 to \$35,000.

Statesville—W. G. Gaither plans to establish an

ice cream plant here.

Winston-Salem—The Forsyth Dairy Co. recently opened up an ice cream plant. The factory, which is designed for a daily capacity of 1,500 gallons of ice cream, consists of three floors, 60 by 65 ft., and is equipped with fifty tons of refrigeration including 12 tons of ice making equipment.

01110

Bellaire—The Star Products Co. was recently incorporated with an authorized capital of \$250,000 to manufacture ice cream and other dairy products. The incorporators are: R. K. Beuter, C. H. Rice and C. J. Mitchell of Wheeling and Antone Genevieve, A. B. Porterfield and A. W. Fellows of this city.

Cincinnati—The stockholders and employees of the Model Drug Co. \$42 W. Fifth st., recently organized the Model Ice Cream Co. with a capital stock of \$10,000. The new company will manufacture ice cream for the four stores of the Model Drug Co. The plant is located in a building at 721 W. 5th st., and has been equipped by the Liquid Carbonic Co. with a 40-qt. Emery Thompson brine freezer and other necessary equipment including a 2-ton Ford truck. R. D. Russell is general manager of the new firm.

PEN NSYLVANIA

Connellsville—The Hagan Ice Cream Co. recently installed one 20-ton and three 30-ton vertical single-acting belt driven enclosed York refrigerating machines. The company is remodeling its 30-ton York freezing tank and 20-ton freezing tank of another make to operate on the York low pressure air raw water system.

Franklin—The Rose Ice Cream Co., 619 12th st., recently installed a new motor-driven Manning can washer, also a new hot water system.

Greensburg—The Dairy Products Co. plans to soon start manufacturing ice cream and is equiping an ice cream plant with a daily capacity of 1,000 gallons.

Philadelphia-The Supplee-Wills-Jones Milk Co.

has just finished a 3-story addition to its ice cream factory which will be used as a power plant and for storage purposes.

Pottstown—Burdan Bros. recently installed one, 24-in. by 8 ft. vertical ammonia drier-cooler-purifier furnished by the York Mfg. Co.

Pottsville—C. P. Golamis recently installed a 2ton vertical York refrigerating machine in his ice cream plant.

Schuylkill Haven-Michel Brothers have added new ice cream and refrigerating equipment to their plant including a 4-ton refrigerating machine.

Sharon—The J. D. Biggin & Son Co. has installed a 20-ton York ice machine and added other equipment to its ice cream plant including 2 Jensen 300gallon pasteurizers and 2 Jensen 300-gallon ice cream mixing vats.

Washington—The Washington Ice Cream Co, which recently incorporated with a capital stock of \$50,000 for the manufacture of ice cream and other dairy products, started operation April 10 in its new plant of 300 gallons daily capacity. The plant was designed and finstalled by K. W. Schantz, Inc., Buffalo. The officers of the new company are: President, Willed Cameron, and severelary-treasurer, E. P. Williams,

SOUTH CAROLINA

Gaffney—The Colonial Ice Cream Co. was recently incorporated with a capital stock of \$25,000 with the following officers: President, H. P. Griffith; vice-president, C. B. Poole, and secretary-treasurer, R. A. M. Craw.

TENNESSEE

Memphis-The Pig & Whistle Ice Cream Co. is reported to have established an ice cream plant here.

TEXAS

Gainesville—The Keeler Ice Cream Factory recently installed a 10-ton vertical, single-acting enclosed York refrigerating machine complete.

Graham—The Graham lee Cream Co. has been incorporated with a eapital stock of \$25,000 by Edward Dolan of Dallas.

Weatherford—J. A. Taylor of Mineral Wells, recently purchased the ice cream business of Mrs. Geo. P. Corcanges.

VIRGINIA

Bristol—The Holston Creamery Co. has awarded a contract for the building of a new 2-story brick plant with concrete foundation and floors. The stockholders of the creamery produce practically all the cream used from cows which are tuberculin tested.

Coeburn—The Coeburn Utility and Mfg. Co. has been incorporated with a capital stock of \$50,000 to manufacture ice cream and soft drink by W. S. Dodd, C. O. Ramsey and J. M. Quillen, Jr.

WASHINGTON

Seattle-The Velvet Ice Cream Co. recently installed a 7-ton Armstrong ice machine.

Selah—The Selah Valley Creamery Co. is reported to have established a new dairy and ice cream plant here.

WEST VIRGINIA

Fairmont—The Mountain City Ice Cream Co. has been incorporated with a capital stock of \$20,000 by Hugh Harr, Frank Jacobs, Kenna Clark, Thomas Murray and J. A. Meredith.

Princetown—The Princetown Ice Cream Co. has recently been incorporated with a capital stock of \$15,000.

Wheeling-The Imperial Ice Cream Co. moved into its new quarter-million dollar plant on March 1. This plant has been in the course of construction the past year and is a reinforced concrete, steel and brick building covering approximately half a city block. The refrigerating plant, which is located in the basement, consists of three 50-ton York machines. In the basement is also located the charging outfit for electric truck as well as lockers for employees and boiler room. The freezing room, with a battery of six large Miller freezers and four hardening rooms with a capacity of 25,000 gallons are located on the second floor. On this floor is also located the can washing room, can storage and shipping department, while along one side of this floor the entire length of the building are the offices. On the third floor is the mixing room with two 500-gal, Cherry-Bassett batch mixers, viscolizer and three 1,000 gal. Elyria glass lined holding tanks. On this same floor is located a fruit storage room, a milk storage room, a sharp freezing room and a large ice storage room, while on the rear wing of the same floor is a 30-ton ice tank. All the fourth floor is given over to dry storage, jobbing supplies and the salt bin. The McCormick Company were the architects.

WISCONSIN

Beloit—The Sturtevant, Wright & Wagner Ice Cream Co. is installing a Vilter refrigerating plant which will give the company a daily capacity of about 25 tons of ice.

Kenosha—The Blommer Ice Cream Co., of Milwaukee, has purchased a site at 650-654 Erie st. and will this month commence building a one-story ice cream plant, 38 by 86 ft., of reinforced concrete with arrangements to take care of additional stories as they are needed. The refrigerating machinery of the new plant will be installed by the Vilter Manufacturing Co., Milwaukee.

Irma—A. Cottrell & Son have established a small ice cream plant on their dairy farm and will sell their output to the wholesale trade.

Ladysmith-H. T. Blanchard is reported to be building an ice cream plant here.

Minocqua—Directors of the Minocqua Cooperative Creamery Co. have decided to establish an ice cream department in their butter factory. Complete ice cream machinery will be installed in time to take care of the summer trade.

Ripon—The Ripon Ice Cream & Beverage Co. has been incorporated for \$50,000 with the following officers: President, Karl A. Mueller; vice-president, W. A. Simmons; secretary-treasurer, F. E. Mueller and general manager, George Bobzine. A plant is being established with a capacity of 600 gal. of ice cream per day, the equipment being furnished by the Creamery Package Mfg. Co. The new company expects to be in operation by May 1.

Sheboygan—The Sheboygan Dairy Products Co. recently added to its equipment three 1,000-gal, glass lined holding tanks, 30-tons of refrigerating and increased its hardening room capacity by adding a new 3,000 gal. hardening room.

Waukesha—The Waukesha Iee Cream Co. has been recently incorporated with a capital stock of \$50,000 with the following officers: President, D. Q. Williams; vice-president and treasurer, D. J. Howell and secretary, Athony Olinger. The company is building a modern plant at Arcadian and Hartwell avenues.

Wansau—The Kleinheinz Dairy Co. is adding a 10-ton York refrigerating outfit with a 3,000 gal. hardening room to its present plant. Also another 60-qt. U. S. freezer and a 300 gal. mixer is being installed. Two new trucks will soon be added to the company's delivered equipment.

WYOMING

Cheyenne—The Corbett Ice Cream Co. of Denver, Colo., opened a branch plant here on March 1. The company is shipping its mix already to freeze from its Denver factory.

TRADE NOTES

New Time Punch

The Schaeffer & Budenberg Mfg. Co., Brooklyn, N. Y., has just placed on the market a new time punch attachment to its Columbia recording thermometers. By means of the time punch the operator in charge of temperature-control registers the hour and minute of his visit. Every time a temperature reading is taken he presses a little button on the lower right side of the recording thermometer, and simultaneously a hole is punched in the margin of the revolving chart.

What is said to be a new form of milk powder is being exploited by Harry Andrews, the inventor and Charles A. Davis, business director, 15 Broad st., New York. The product is said to differ from the milk powders now on the market in that under ordinary conditions of temperature the butter fat keeps many months without deterioration and rancidity.

The Davis-Watkins Dairymen's Mfg. Co., North Chicago, Ill., has become distributors for "Glascote" ice creant storage tanks, vats, weight tanks, etc.

The Rogers Milk Products Co. was recently incorporated with a capital stock of \$3,000,000 by C. Rogers, F. C. Jerome, O. F. Bartlett; attorney A. C. Bragaw, 140 Liberty st., New York, N. Y.

The company will manufacture condensed milk and other dairy products. The new corporation has a plant at Putaski, N. Y., and will establish a number of others in New York and surrounding states.

The Ice Cream Manufacturers' Supply Association, 453 Hudson St., New York, N. Y., was recently incorporated with a capital stock of \$25,000 by M. Schiff, P. Steigman and S. Ahelmacker to manufacture and sell condensed milk, milk powder, unsalted butter, and other dairy products.

OBITUARY

Walter M. Lowney

Walter M. Lowney, internationally known manufacturer of chocolate bonbons and cocoa



and founder and chairman of Board of Directors of the concern bearing his name, died suddenly April 4, in Atlantic City, New Jersey. He was 65 years old. Mr. Lowney was born in Sebec. Maine, on September 2, 1855, the son of William and Eliza Weston Lowney. He was educated in the pub-

lic schools of Bangor, Maine, and was married to Miss Nettle Bolton of Bangor, Maine, on Jannary 25, 1877. Coming to Boston in 1883 and he began the manufacture of chocolate bombons in a little shop on South st. From there he moved his plant to Pearl and High sts. and later established his chief factory on Commercial st, where it is now.

Mr. Lowney's business grew to such an extent that in 1890 he incorporated it under the firm name of The Walter M. Lowney Company and became its president. In 1903 he established the Lowney Plant at Mansfield, Massachusetts and in 1906, chartered The Walter M. Lowney Company of Canada. Ltd., and became its president. He was exceedingly generous to his employees, distributing a share of the company's profits among them nearly every year. In 1919 the company presented to its employees life insurance policies for \$250.

At the St. Paul convention of the National Confectioners' Association in 1920, Mr. Lowney was elected to the Honorary Roll in recognition of his long years of devotion to the interests of the Association. Mr. Lowney served as Chairman of the Executive Committee of the National Confectioners' Association from 1894 to 1897 and had a good deal to do with the preliminaries of Pure Food Legislation. He was President of the Association from 1897 to 1899 and also President from 1896 to 1898 of the New England Confectioners' Club.

Mr. Lowney was a director of the Boston National Bank, Boston, Mass., and a member of the Massachusetts Charitable Mechanics Association. He was a member of the Executive Committee of the Board of Directors of the Boston Chauber of Commerce for three years and a director of the First National Bank of Mansfield, President of the Mansfield Realty Association and a director of the Mansfield Board of Trade. He was a member of the Executive Committee, of the Associated Industries of Massachusetts and Chairman of their Americanization Committee.

Being a diligent worker, Mr. Lowney used to say he worked for the joy of doing things. For long, however, he had been interested in boys' clubs and was an enthusiast in agitating that boys should have wholesome surroundings and be aided by uplifting influences. He was a director of the Boys' Club Federation and an overseer of the Bunker Hill Boys' Club, Charlestown.

Mr. Lowney made his home in Mansfield and was deeply interested in the Mansfield Town Management Plan and took an active interest in all civic questions pertaining to Mansfield. In 1917 he was the guest of honor at a banquet in Mansfield in recognition of his giving Lowney Park to the town. He was a 32nd degree Mason, member of Boston Commandery, Knights Templars, and a Shriner, belonging to Aleppo Temple. Boston.

King Upton

Following a short illness of two weeks King Upton, President of the Crystal Gelatine Co., of Boston, Mass., died from pneumonia on Sunday afternoon, February 27, at his home, 26 Waldron st., Marblehead, Mass.

Mr. Upton was born in Peabody, Mass., on April 12, 1862, the son of George and Marion (Cloutman) Upton. He attended the schools in his native town and was graduated from the Peabody High School. At that time his father, George Upton, was continuing the manufacturing business that had been founded by his grandfather, Elijah Upton, in 1808, and had been carried on by his father, Elijah Wood Upton, under the name of Upton and Company, Upon his graduation from High School, King Upton went to Technology with the class of 1883, but his father's failing health made it necessary for him to leave college and assume the responsibilities of the business to which he succeeded at the death of his father in 1883.

Being interested in yachting Mr. Upton had been a yacht owner since 1885. His pennant was well known in the various harbors and along the cruising reaches of the Atlantic Coast. He was holder of a Carnegie medal for bravery, awarded for saving from drowning Francis H. Low.

Mr. Upton was married in Salem, Mass., thirtyeight years ago to Anne Dane. She survives him
together with a son, George Upton, and a brother,
Roger Upton. Attended by business associates,
yachtsmen, classmates, friends and neighbors, his
funeral was held at St. Michael's Episcopal Church
at two o'clock, Wednesday afternoon, March 2.

WANTS, FOR SALE, ETC.

Advertisements under this head, six cents a word each insertion, classification head and address not to be counted. Minimum charga \$1.00. Remittence Must Accompany Order. Help and situation want add will be given one insertion free.

- SITUATION WANTED—As manager or superintendent of plant doing two hundred thousand gals, per year. Fifteen years of practical experience. Married and can furnish A No. 1 recommendations as to character and ability. Address L. O., care This Lee Crarm Trade JOCENAL.
- SITUATIONS WANTED—By experienced men at salaries from 500 to \$200 a week. Our men really know the business. Address lee Cream Managers & Superintendenta Association, E. A. Kellogg, Secretary, Room 604, 286 Fifth Ave., New York City. Telephone Longacer 4073.
- STELVILLE WARTER-CIRCULE of Ayer dairy course this against desire connection with propressive ter crane company in manufacturing department. Willing to start at moderate salary and gain promotion through merit. Have had two seasons' experience in ice cream plants. Available TARRE JOSEAN Address A. C. L., care THE ICE CREAM TARRE JOSEAN ADDRESS.
- SITUATION WANTED—As manager of ice cream department. Thoroughly understand homogenizing and viscolizing machines, also leating cream, milk and condensed. Could bring help with me. Salary \$175 per month. Address P. Y., care THE ICE CREAM TRADE JOURNAL.
- SITEATION WANTED—As chemist, managerial ability, now employed, charge laboratory and creamery in large condensery. Three years dairy course, scientific, practical. Understands pasteurization, homogenizing, sanitation. Mojonnier, Babcock, tests. Conscientions worker. East preferred. Size CREAM TARRE JOURNAL MODERN. L. L., CHE PIR. I.C.
- SITUATION WANTED—As manager of creamery and ice cream plant where knowledge and experience are required. Employed now on instructive work. Address H. E. N., care The Ice Cerum Trans Journal.
- STUATION WANTED—Will be open for a position about June I as superintendent or manager of large city milk or ice cream plant. Theorogshy understand every branch of the cream plant. Theorogshy understand every branch of the latera work. Am familiar with both American and French creams. Have also had a large experience in the sods water and catering business. Can handle help and get results. Address S. M. J., care Thu Erc Ream Tanas Journal.
- SITUATION WANTED—By ice cream maker who is capable of taking full charge of ice cream plant, one who understands thoroughly all details in the manufacture of the best ice cream that can be made. Address W. D. G., care Th
- Structure Wastra—I am un agriedlural cellege graduate person in commercial dairy own. Have full knowledge of mixing, use of emulallying machinery and freezing. In this acreany person have had managerial reprosessibilities and list acreany person have had managerial reprosessibilities and accounting and selling methods. At prepent connected with from making 5,000 gallous in height of season, but would find particulars in first letter. Address R. E. S., care Tast Ice Casant Tange Journal.
- SITUATION WANTED—Engineer open for position to take care of all construction, maintenance and operation. Theroughly experienced in all types and capacities of refrigerating machinery. Practical knowledge of cost accounting. Would like to make connection with large, we'll established Taxos Journal of the Charles of the C
- SITUATION WANTED—As foreman or homogenizer operator by first class toe cream maker with 16 years' experience. Unferstands emulsifying and homogenizing thoroughly, Give full particulars as to salary and conditions in first letter. Address W. L. D., care Title Ice CEANA TRADS JOURNAL
- SITUATION WANTED—Experienced dairy machinery sales engineer desires connection with enterprising firm. State salary in first letter. Address W. B., care The ICE CREAM TRADE JOURNAL.
- SALESMAN WANTED—To sell high grade extracts, flavors and colors. Mention experience and what lerritory acquainted with Extraordinary opportunity for right man. Address The Julius Marcus Co., 1556 Gratiot Ave., Delroit, Mich.
- Help Wanter-Ice cream maker who understands the refrigeration system and not afraid of work to take charge

of the manufacturing end of a 100,000 gallon plant. Steady justition with good chance for advancement for the right man. State experience, age, single or matried, reference and salary expected. The Leichtman Ice Cream Co., Harleton, Pa.

11.11 WASTIN—Expert ice cream maker to take chare of the maining and freezing rooms of a 5,000 gallon a day of the and modern ice cream plant. Must be an expect on fancy brick cream, ices and absentes. Preference given to man who can make an investment in the concern. The position of the property of the concern. The position of the property of the

HELP WANTED—Young man capable of taking care of a 35 h.p. borizontal marine boiler and the refrigeration and ice Preference given to man who can make a small investment with our concern. State experience and reference. Address K. F. P. C., care The 1ce Caran Tanab Journal.

HELP WANTED—Ice cream maker. State experience, whether married or single, salary expected, etc. The C. O. Wells Creamery Co., Crestline, Ohio.

HELF WANTED—An ice cream maker with some experience, also understanding refrigeration plant. State what firm last worked for and salary. Address O. R., eare The ICE CREAM TRADE JOURNAL.

HELP WANTED—A practical ice cream maker, one who understands homogenizing, etc. New plant. Reply giving experience and wages. Address H. C. A., care THE ICE CREAM TRADE JOURNAL.

Foa Sale-Fifty dollars buys 20-qt. Miller Tyson brine freezer. In perfect condition. Gregory Ice Cream Co., Mauchester, Maryland.

For SALE—The following DeLaval separators, late type, in first class condition: No. 61, turbine drive, price \$600.00; No. 60, belt drive, price \$350.00. John W. Ladd Company, Detroit, Mich.

Foa Salk-Two 10-gal. White Mountain ice cream freezers with tight and loose pulleys, tubs, cans all complete, good shape. Lot of extra tubs and cans. Address Harry Smith,

For Sala—Ten-ton Baker ice machine with oil trap. Cen-trifugal brine pump. Refrigerator door opening 32x24. All guaranteed first class condition. Garrison Ice Cream Co., Greenville, S. C.

Foa Sale-Emery Thompson brine system 10-gal, freezer, brine box, ice erusher, 4 b.p. motor, shafting and pulleys complete. Used only one season. Will sell cheap. Herbert T. Rodenhaver, Chambersburg, Pa.

Foa Sate—One 15-ton York ammonia compressor. Informa-tion furnished on request. Elmira lee Cream Co., Elmira, N. Y.

Foa Sale—One Fort Atkinson, brine cooled, belt drive, ice cream freeer, used one season, guaranteed good as new pansion tubes, 8.2" water tube, used every fittle, guaranteed good as new. Write for particulars and prices. Farmers Mutual Creamery, Abingdon Va.

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Progress and others; one 600-gal. Cherry metal jacket motor
one 200-gal. M. c. motor drive homogenizer, also one 600-gal. And
one 200-gal. M. c. motor drive homogenizer, also one 600-gal. And
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 deep well pump; all size cans, tubs, 300 tub and tank lined calinets. Send for list. Philadelphia Retinning Co., North Philadelphia, Pa.

For SALE—One 5-ton belt driven York, one 5-ton belt driven Brunswick, one 10-ton belt driven Remington, 8,000 ft., 1½, inch ammonis belt coils, sax sections double pipe brane coolers. Immediate shipment. W. C. Hardy, 1215 Filbert st., Philadelphia, Pa.

Foa SALE-Three new Cherry Model "1" 60-qt. freezers, motor driven. Rich Ice Cream Co., Buffalo, N. Y.

Foa Sale—Three 40 qt. upright C. & B, improved freezers, complete with copper cans, good condition, cheap. Also 500 5-gallon tubs newly repaired and painted \$3.00 each. The Hutchinson Co., Cedar Rapids, Iowa.

Foa Sale-Manton-Gaulin homogenizer, 60-90 gal. per bour, in first-class, serviceable condition. Price \$400.00 cash, f.o.b., Bloomington, III. Snow & Palmer Co., Blooming-

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FOR SALE—One 200-gal. Sharples emulser, 100-gal. Cherry mixer and tubular cooler, practically new. One Davis 2xo hand bottler and capper, good condition. Write us. The Decatur lee Cream Co., Decatur, Ill.

For Sale—lee eream plant and creamery, best equipment, 10ton ice machine. This a money maker. Missouri resort town, ten thousand population. Al reason for selling. Address S. P. R., care The I'ce Caeam Tader Jouand.

WANTED TO BUY-At once, Mojonnier fat and solids tester, also ice cream overrun tester. State price, condition and time it has been in service. Address M. G., care Tite Ice Cream Trade Journal.

WANYED TO BUY-Individual ice cream moulds, any quantity from 25 to 1000. Must be in first class condition. State price and number you have in first letter. Address J. Schrauth's Sons, Poughkeepsie, N. Y.

CATALOGUES, ETC.

Section one of the Davis-Watkins Master Catalog No. 2 has just been issued by the Davis-Watkins Dairymen's Mfg. Co., North Chicago, Ill. Section one is a complete illustrated booklet of 16 pages covering milk and ice eream cans.

Rees & Stindt Machine Works, 544 W, 58th st., New York, N. Y., recently issued an illustrated booklet depicting its R. & S. Combination Machines which combines the breaking of ice and freezing of cream into one self-contained machine. The booklet also covers the R. & S. ice cream freezer and R. & S. ice breaker.

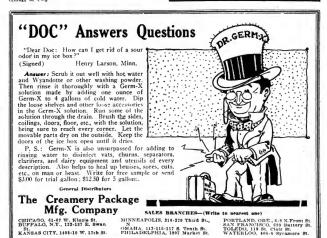
J. G. Cherry Co., Cedar Rapids, Iowa, just published for distribution to the trade a bulletin entitled "Creating a Greater Demand for Market Milk." The booklet takes up the advantages of the gravity system of pasteurization. It is also a comprehensive history of pasteurization.

The Mono Corporation of America, 25 W. Broadway, New York, N. Y., recently issued a folder describing the "Duplex Mono," an apparatus designed to reduce fuel costs by sato-matically analyzing and recording the combined percentages of three combustile gases (C). CH, and He), when they appear in the fuel as well as accurately recording the percentage of Co-entage of Co

The engineer that keeps the instruments for operating the steam equipment of his plant in reliable condition and neglects the electrical is doing only half the job. Frequently it is possible to make large savings by a proper analysis of the electrical requirements but this cannot be done unless the instrument records are reliable.

The report of the sales tax collections for the month of Cctober, just submitted to United States Collector Carter, shows that taxes on soft drinks and ice cream sold in southern California amounted to \$80,981.32 for the month, as compared with \$73,700.41 for the corresponding month of last year.





"Watching Costs"

An accurate knowledge of operation costs is absolutely essential to profitable business.

Thus, thous and s of Ice Cream Parlors, Luncheonettes and Confectionery Stores, after investigating their cleaning costs, proved that the distinctive sanitary cleanliness which follows the use of



is not only profitable in itself, but is also more economically obtained than by any other methods.

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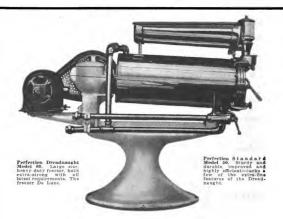
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ALL THE YEAR ROUND,

For BIRTHDAY PARTIES, WEDDINGS.

or ANY KIND OF AN ANNI-VERSARY You can have

ANY NUMBER FROM 1 to 99 IN A ONE QUART BRICK

Order through your JOBBER or
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VINCENNES INDIANA



Built to Excel Other Freezers

During last year's busy ice cream season, two Cherry engineers froze cream in an ice cream plant day after day, using several different makes of freezers side by side with two new, 1921 model

Cherry Perfection Brine Freezers

The new model stood the test—in every detail of effective operation; it outdistanced all the other freezers working beside it—in every point.

As a result of their summer's experience, Cherry engineers are confident that the Cherry Perfection Freezers will add honor to the J. G. Cherry Company reputation.

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Write for complete description and names of users.



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Passes your ice cream and milk cans back and forth without loss of temperature—requires but one operator when fitted with unloading device. Great saver of time and labor—specially constructed for constant hard service. 20 and 40 quart sizes in stock. Ask for catalogue No. 9 with full details.

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CATTARAUGUS, N. Y.



The Perfex Tester

(FOR ICE CREAM)

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Complete With Chart

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It occupies practically no space in the freezing room, operates quickly and is very convenient to use.

The height is 8 inches, the width is 9 inches, and it weighs approximately 7 pounds when ready for shipment.

Send for complete information at once; better still, place your order promptly.

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Reduces Your Brick Cutting Expense.

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The one big business that has gone right along without interruption and, like a rolling snowball grows bigger and bigger, because of the ever increasing demand for a fine smooth ice cream.

When your finished product is smooth and has the right body you can be sure that more and more of your ice cream is demanded.

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The Most Important Unit in the Gaulin Homogenizer





The Gaulin Homogenizer

Homogenizing Valve and Head

VERY ounce of the product homogenized must go through the homogenizing valve. Furthermore, to be uniformly homogeneous, emulsified or viscous, the entire batch must go through under equal pressure. If the pressure on the valve varies, the uniformity of the batch homogenized will vary.

Since the Gaulin Homogenizer Valve is a spring valve, the pressure is always uniform. No other homogenizer or machine purporting to do what the Gaulin does, can use a spring valve without infringing on the Gaulin patents. Hence, they must use a rigid valve. As there is no give to a rigid valve, it soon gets clogged with foreign matter and pressure raises. An attendant must release it by hand, and then the pressure falls. As the pressure varies, so does the homogenity of the product.

Because of the spring type Gaulin Homogenizing Valve, any desired pressure can be obtained. If the whole mix is to be homogenized, a pressure of 3500 or 4000 lbs. is easily obtained. No other machine can reach such a pressure and

When you buy a homogenizer, get one that will do your work under any and all conditions with safety, and without the constant attention of an operator. Get one that will turn out a uniformly homogeneous product—a product that is as smooth and silky in one part of the batch as in another. If you investigate carefully, you will find but one machine that will answer your purpose-the Gaulin Homogenizer.

Write for booklet giving instructive information on the homogenizing problem. Ask for "The Story of the Homogenizer."

Manufactured by THE MANTON-GAULIN MFG. CO. DISTRIBUTED BY

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Ice Cream and Milk Cans

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can or kettle which is all there except the protective
coating.

coating.

Our process of re-linning puts on a heavier coat than the can had originally, so you have better can equipment at a fraction of the cess of new cans. up the shape, restoring all the original value of the can. Send us a sample today and we will retin it grasis and return to you at once to show you our class of work and also, how much gold you can save.

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OFFERS A READY SOLUTION

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LOWN & SON

POUGHKEEPSIE, N. Y.

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Sizes: 1 Qt. to 50 Qts. Always In Stock

Special Sizes for Cabinets or Packing to Order



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Why use expensive, untidy, time-losing strings or wires while tagging your tubs or pails of ice cream?

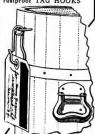
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Our new type of
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NEW PRICE SCHEDULE READY

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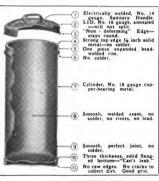
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- 10-Endorsed by leading manufacturers.

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PHILADELPHIA I

Exide Batteries of Canada, Limited, 133-157 Dufferin Street, Toronto



ELECTRIC

"Right" Shoes On Both Feet

are not right. Each foot needs a shoe built to fit it.

Motor truck work isn't all alike. Different kinds of work call for different kinds of trucks.

Probably one kind can do it all. There was a time when shoes were made the same for both feet. But just as shoes that fit give greater comfort and increase the wearer's efficiency, so do trucks that fit the conditions do more work, and save money.

Electric trucks fit city hauling conditions. They are reliable and clean; the motor does not run when they stand idle, and continual starting and stopping does not hurt them; they cost from \$5.00 to \$15.00 less a day to run.

You have probably been wondering how they would fit in on your work. It is easy to find out.

We have full information which we will be glad to put at your disposal on request.



Abbotts Ice Cream Company and Abbotts Alderney Dairies began using C-T Electric trucks in 1919, and have already placed four repeat orders, in 1919, 1920, and two this year. Electrics are rapidly replacing their other equipment on city and suburban work.

Commercial Truck Company Philadelphia



Cut the High Cost of Delivery

by the use of

ELECTRIC TRUCKS

equipped with



Edison Storage Batteries

- 1. Cheaper Operation is obtained.
- Note 2. Better Service is instituted.
 3. Dependable Deliveries assured.

Built of all Iron and Steel, this battery lasts-and withstands the rigors of city work.

It is Easy to Maintain-you don't need an expert Electrician.

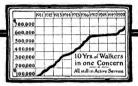
Over a long period of years, it has a known cost of operation and has proved itself to be Standard for this work.

The Edison-equipped electric truck is the logical delivery vehicle for the ice-cream manufacturer who counts costs for use in city work.

> Our Bulletin 500 BD will show you why many firms have chosen Edison-equipped electric trucks for their delivery systems. Write for it -TODAY.



New Haven



10 Years of Re-orders! Before a company invests a million it makes sure. Re-ordering year after year and with all the original equipment still in active service, these concerns now operate Walker Electric Fleets valued at—

A department store	,			\$900,000
A central station .				700,000
An express company				630,000
A terminal company				400 000

Some of these companies have given more time and care to the choice of economical and dependable trucking service than the ordinary man can spend in a life-time. Start where they left off and you will profit by their experience.

> Write us today for "The Walker Story for Busy Men."

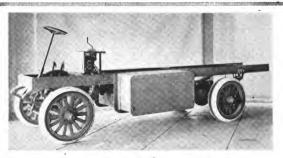
WALKER Electric TRUCKS LOWEST TRUCKING COST

WALKER VEHICLE COMPANY CHICAGO NEW YORK BOSTON PHILADELPHIA



AMERICA'S
LARGEST
MANUFACTURER OF
ELECTRIC
R O A D
TRUCKS





Simplicity Durability Economy

Simplicity, durability and economy are the three outstanding features of WARD ELECTRIC TRUCKS.

WARD ELECTRICS are simple in construction. They have but one motor and one pair of driving gears in the propelling mechanism. Contrast this simplicity with other constructions using from eight to thirty-two gears in the driving train.

WARD ELECTRICS are durable in operation, partly because of the simplicity of construction and very largely because of the oversize parts used in the various component parts of the truck. For instance, we use the Sheldon locomotive type of axle and have adopted their 5 ton axle for our 3½ ton model and their 7 ton axle under our 5 ton model. Ward Electrics last!—that puts them first!

WARD ELECTRICS are economical, not only in first cost, but in operation cost as well. They are economical in first cost, because we give you more for your money than any other electric truck builder. They are economical in operation because of the simplicity of the driving mechanism, the durability of the truck in service and the high efficiency and consequent low current cost necessary for the propulsion of the truck.

FREE ANALYSIS FORM. In justice to yourself, investigate WARD ELECTRICS? We'll send you free Analysis Forms that will lead to economy in delivery costs. It will cost you nothing to do this and it may be worth many thousands of dollars to get a satisfactory solution to your transportation problem now.

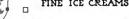


Ward Motor Vehicle Company Mt. Vernon, N. Y.

Builders of Electric Trucks
750 to 10,000 lbs. capacity



FINE ICE CREAMS



Main Office & Exclory
2235 - 2245 WEST VAN BUREN ST. WEST RIVENSWOOD PARK & BERTEAU AVE Telephane Lake View 6102

Telephone West 752 . Chicago . December 24, 1920.

The White Company, Chicago, Illinois.

Attention Mr. M.G.Stoner.

Dear Sir: -

Replying to your request for information on White trucks in my service, wish to advise that I have used White trucks since 1913 and today have eeven in service. My first White truck has run 100,000 miles and is good for many more. I have used other makes of trucks and have found that the White Truck is most economical, durable and dependable. The first three or four years in a trucks life e not show much difference in favor of the White but after that time the expense of operating the other makes is so great that it is prohibitive.

In my business I must have a truck that will operate under pressure during warm weather. A truck out of service during that time is most expensive in loss of business and it is much better to invest a few dollars more in a White and be sure that it will be ready in any emergency.

The White Company has always been able to furnish repair parts on short notices and the fact that you do not change models every year or so makes parts interchangeable on trucks purchased at different times.

I will not purchase anything but Whiter for my business, evidence of which was the purchase of three of your new double reduction drive trucks this year, which are giving perfor satisfaction. It is a pleasure to write year about White Trucks as they have materially assisten as in the monocerful operation of my business.

Yours very truly.

Note-Since the above letter was written, Mr. Cunningham has purchased three more White Trucks.



PUBLISHED BY THE WHITE COMPANY CLEVELAND



"We Standardized on SELDEN Trucks Because We Found Them Dependable"

"Because of the consistently good service rendered by our SELDEN Trucks, we feel that it would be a waste of time for us to ever consider any other make." That is the opinion of the City Creamery Co. of Kansas City, Mo.

Four sturdy SELDEN Trucks of $3\frac{1}{2}$ and $2\frac{1}{2}$ ton capacity are used by this company to deliver from 250 to 450 gallons of ice cream a day over a territory extending 12 miles from the plant.

The cost of delivery by these SELDEN Trucks averages between six and ten cents a gallon, according to the size of the load carried. Maintenance cost is exceedingly low. During its first

season, the total cost of repair parts for one of the 3½ ton SELDENS was but 75 cents.

All the others have similar good records. The basic strength and dependability of SELDEN Trucks enables them to work on indefinitely without a layup. "TRUCK TRANS-PORTATION" will be mailed free to all interested upon recespt of request to Dept. IC.

sterested upon receip f request to Dept. IC SELDEN TRUCK CORPORATION Rochester, N. Y.

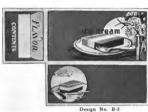
11/2, 21/2, 31/2, 5 Ton Models-All WORM Drive

SELDEN TRUCK CORP'N, ROCHESTER, N. Y., U. S. A.











Design No. B-3

Beautiful Stock Designs in Waxed Ice Cream Cartons

H OW do you pack your brick ice cream? Do you use a plain paper box, or a cheaply printed carton that neither identifies you nor appeals to the artistic sense or appetite of the purchaser?

Look at the designs we illustrate here. They are but three of a number of designs beautifully finished in three colors, specifically designed to meet the requirements of the most exacting purchaser, yet they can be purchased for only a fraction of the cost of specially designed cartons, and for comparatively little more than a cheap printed carton.

little more than a cheap printed carton. Now is the time to order cartons for your summer trade. And be sure it is an artistic, attractive carton that will act as an advertisement for your ice cream, and you. Figure on your carton requirements for this season. Select one of the three designs illustrated, or write for samples of the other designs we have available. We will gladly submit prices on any quantity, imprinted with your particular brand, the name of your company, and your address.

Our new catalog, illustrating these designs and many others in full colors, will be ready for distri-bution within a very short time. Write in today— let us give you prices and samples, and send you one of these new catalogs. Please address Dept. 84.

Sutherland Paper Co., Kalamazoo, Michigan Mutual Building KANSAS CITY 14 E. Jackson Blvd. CHICAGO 336 Broadway





Thru the Consumer: People like to carry Sealright Containers—they are neat, sanitary and attractive. They neat, sanitary and attractive. They do not leak-they keep bulk ice cream in perfect condition for a considerable

Thru the Dealer: Sealright Containers are easily and quickly filled-they hold exact measure (dealers do not cut down profits thru loss of overmeasure.) Stimulates bulk ice cream sales, more profitable to the dealer, more satisfactory to the consumer. Order Thru Your Jobber-Write Us for Samples

Said a Prominent Ice Cream Manufacturer

"I want to make it as common to carry home a pint or a quart of my ice cream as to carry home a pound of butter or a dozen eggs. Developing this trade to the limit not only means larger volume at all seasons, but it also means a steadier volume in the wet and cool weather periods when volume is particularly desired. If the people of this country can afford to pay \$1,000,000,000 per

SEALRICHT LIQUID-TICHT PAPER CONTAINERS



year for soft drinks, it is certain

MEMBER 1

SEALRIGHT COMPANY, Inc. **NEW YORK**

should

ice cream.'

consume

several times the

present amount of

Largest Manufacturers in the World of Paper Containers





3 Cyclone Brick Cutters used at factory of A. CARDANI, 937 6th Ave., New York City.

If some people are using Cyclone Ice Cream Brick Cutters with satisfaction

Why Not You?

In ordering mention size of quart and amount of slices desired.

LOUIS CUMMINGS, Mfr. 1035 Third Ave. New York

A Mark of Quality-



The Ice Cream Manufacturer

ALLEN'S ONE-PIECE SANITARY CAN LINERS

in his cans places a distinctive mark of quality on his Ice Cream.

Samples and Prices Upon Request.

Sold by your Supply Man or write to

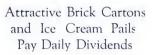


The Allen Candy Company

PONTIAC, ILLINOIS

Sole Manufacturers





The consuming public will maintain a higher regard for the purity and high quality of your Ice Cream if it comes to them in a MENASHA Carton or Pail.

The completeness of Menasha Service meets all of the Ice Cream Manutacturer's requirements for attractive retail packages, Quarts, Pints, Individual Slice Cartons and Pails in every standard Size. All printed attractively with your conviniented design.

The Menasha reputation for highest quality, workmanship and appearance is well merit-ed. We accept it as part of our responsibility to see to it that your Ice Cream Cartons and Pails create a favorable impression for your brand of cream.





Menasha Paraffined Can Liners Lengthen the Life of Ice Cream Cans

HERE are still some Ice Cream Manufacturers who are overlooking the economy of the paraffined can liners.-The new

MENASHA can liners are especially desirable. They will please your customers as well as save your cans. A clean, white sheet, waxed both sides and exceptionally tough. The new MENASHA Can Liner saves time in the hardening room-it will not soak up, or peel from the dipper. With all its additional advantages it costs less. We will welcome your request to send samples and prices.

MENASHA PRINTING & CARTON CO.











The stock line of Menasha Ice Cream Pails are made of solid manilla and filled stockin three styles and in all sizes, including both wire and tape handles. We also furnish pails printed with special designs in two and three colors, on white patent coated stock.

Mojonnier Tester

An Essential in All Up-to-Date Ice Cream Plants, Soon Pays for Itself — Then Pays Dividends,



Sold direct through your jobber.

Write for bookle

Mojonnier Bros. Co.

MILK ENGINEERS

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BRANCH SALES OFFICES.
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Atlanta, 126W. Peachtree St. San Francisco, 29 Balboa St.



You Can
Make the
Very Best
Ice Cream
in this
Progress
Freezer
at
Low Cost.

Mail the Coupon Today for Information and Low Prices

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An Elyria Engineer can prove that Elyria Equipment will reduce operating expense by eliminating lost time, effort and materials, by improving plant layout, by saving valuable floor space, and by maintaining the quality of the output. An investigation of your requirements entails no obligation. Write the Home Office or your nearest branch.

Pasteurizers, Storage and Aging Tanks, Truck and Car Tanks, Batch Mixers, Weigh Tanks, etc.

SERVICE-NOT JUST EQUIPMENT

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GLASCOTE TANKS

Davis-Watkins Dairymen's Mfg. Co.

DISTRIBUTORS TO THE

DAIRY and ICE CREAM TRADE

Our Executives and Engineers have spent the last two years on investigations of GLASS and ENAMEL Tanks.

As a result our Organization has become Distributors to the Dairy and Ice Cream Trade for "GLASCOTE" Tanks, Vats. Weight Tanks, Ice Cream Storage Tanks, etc.

Our reasons for so doing are:

Pure White Coloring

They must be kept CLEAN or they show it

Because it's white must be perfectly made-otherwise defects are plainly visible

GLASS is SUPERIOR to Enamels

It is harder, non-porous and insures freedom from checks or cracks due to quick changes of temperature

Made in a NEW FACTORY-modernized and up-todate facilities for efficient manufacturing.

DAVIS-WATKINS DAIRYMEN'S MFG.CO.

JERSEY CITY, N. J. DENVER, COLO. NORTH CHICAGO, ILL. SAN FRANCISCO, CAL KANSAS CITY, MO.

AKERS OF THE FAMOUS DAIRYMEN'S CANS



suit their purposes. This is well demonstrated in cases. where concerns using other equipment have "switched" to Pfaudler. We are listing below some of the dairy and ice cream companies with whom we have had the pleasure of doing business; many of these are equipped throughout with Pfaudler Glass Lined Steel.*

tried all others, that Pfaudler Glass Lined Steel will best

Sussiness; many of these Sheffield Parum Company Contrastion Mill. Products Contrasting Mill. Products Contrasting Mill. Products Contrasting Contrast ut with Pfaudler Glass Lined Steel.

Ottawa Dairy Co.

Ottawa Ont. Canada Montreal, Usor Canada Pacific Milk Co.

President Milk Co.

Ottawa Ont. Canada Pacific Milk Co.

President Milk Co.

Dails. Terast

Abbott-Ablerney Co.

Salem. N. J.

Farament Ice Cream Co.

Farament Ice Cream Co.

Clariburg, W. Va.

Farament Co-Dy Creamery and

Supply Co.

Supply Co.

Supply Co.

Dails. Terast

Abbott-Ablerney Co.

Carbaturg, W. Va.

Farament Co-Dy Creamery and

Supply Co.

Supply Co.

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Abbott-Ablerney Co.

Carbaturg, W. Va.

Clariburg, W. these are equipped through

NY York, N. Y.

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Series of the Worester, Mass
Cheage, Ill.

Springfeld as Committee
Cheage, Ill. Y.

Ser York, N. Y.

Deroid, Nich,

New York, N. Y.

Deroid, Nich,

Calumbun, Ohio
Deroid, Nich,

Akron, Ohio
Gree Bay, Wa.

Minneapolis, Minn.

Oheage, Ill.

Cheage, Alma, Wis. Belleville, W. Nunda, N. Y Belleviñe, vras. Nunda, N. Y. Alhert Lea, Minn. Chicago, Ill. Courtenay, B. C. Canada

The PEAUDLERCO. ROCHESTER, N. Y.

The World's Largest Makers of Glass Lined Steel Fourtment

NEW YORK Enamelled Metal Products Corporation, Ltd., Imperial Bidgs., 56 Kingsway, London, England
Mauri Bros. & Thompson, 123-131 Castlereagh St., Sydney, Australia SAN FRANCISCO CHICAGO

*We wish to express our regret at our inability, because of lack of space, to make this list complete.

DUMORE PUMP

Simplicity_Safety_Efficiency_Durability



Price

200 to 400 Gals. \$1,000.00 400 to 600 Gals. \$1,000.00

THE DUMORE has proven its value in recombining dairy products and making a perfect homogeneous mass of an ice cream mix. It eliminates operator, mechanic, repair bills, motor and belt troubles, delays any possible accidents. If patented it would sell for five times its price and still be the cheapest machine of its kind for it lasts a life time.

Distributor

THE ELYRIA ENAMELED PRODUCTS CO., Elyria, Ohio

Manufacturer

NATIONAL STEAM PUMP CO., Upper Sandusky, Ohio

The Improved Little Giant

Can Washer

Washes Cans Clean and at Lightning Speed

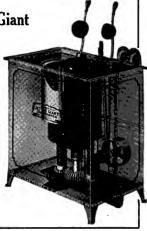
That's the reason the largest plants are using it. All sizes of cans, from 4 to 40 qt, are thoroughly cleaned both inside and outside without change of brushes. Washes cans better than machines costing many times more. Furnished either with belt drive or with direct connected motor.

Catalog for the asking.

C. Doering & Son, Inc.

Lake and Sheldon Sts.

Chicago



Can Sterilizer and Drier No. 6A

Absolute Sanitation Through Proper Sterilizing and Drying

STERILIZE AND DRY YOUR ICE CREAM CANS WITH THE NO. 6A.



Capacity 250 Cans Per Hour

Prevents Rust Lengthens Life of Cans

Insures Bacterial Control and Reduction

Provided with special Double Port Valves and additional tables so as to accommodate Six Cans and Covers at the same time.



Treats Cans of Ten, Five, Three Gallons and smaller size.

No Odor-Sweet Smelling Cans

Increases Keeping Quality of the Product.

Write us for full particulars.

Jensen Creamery Machinery Company

Builders of "Equipment of Practical Efficiency"

BLOOMFIELD, N. J.

OAKLAND, CALIF.



W E know you have no interest in this plant or its equipment until you find yourself in need of pumps or information about them, their selection—installation—or operation.

Then is when you will appreciate the possibilities here and be glad there is such a pump factory making pumps for the milkproduct industry.

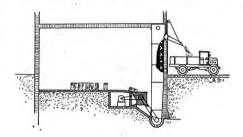
You know these men—they know us, they have sold you the Viscolizer and can help you in any pumping problem.

John W. Ladd Company Detroit and Cleveland
Cherry-Bassett Company
Gowing-Dietrich Company Syracuse, New York
Wright-Ziegier Company
Dalrymens Sup. & Con. CoPittsburgh, Pennsylvania
Oakes & Burger
R. G. Wright & Company Buffalo, New York
Alberta Dairy Sup. Ltd Edmonton, Canada
DeLaval Company, Ltd
W. A. Drummond & Co
Baker, Hamilton & Pacific Co
A. H. Barber Cmy, Sup. Co
Beatrice Creamery Company Denver, Colorado
Bessire & Company
Blanke Mfg. & Supply CoSt. Louis
J. G. Cherry Company
Dairy Machinery Vo., Inc
Enterprise Dairy & Pmy. Sup. Co Cincinnati and Columbus
Huey & Philp Howe, Co
Kennedy & ParsonsOmaha and Sloux City
N. A. Kennedy Supply Co Kansas City, Mo.
Meyer Dairy Equipment Co
Mojonnier Brothers Co
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C. E. Rogers Detroit
D. J. Weber Co Los Angeles, Palifornia

UNION STEAM PUMP COMPANY BATTLE CREEK, MICH.



You Can Save Money In Breaking and Handling Your Ice



When the second state of the second states and the second states and second sec

Ask for Catalog No. 909 T.

J. S. Lovering Wharton, Mfr. 3123 N. 17th St., Philadelphia, Pa.



Crushed Ice and Salt Elevators

FOR

Ice Cream Manufacturers

Ice Cream Can Tongs, Used for Lifting Ice Cream Cans out of Tubs, Etc. Life of Cans Increased 100% You can handle your blocks of ice, crushed ice and salt quicker and at far less cost with G-W equipment.

We are specialists in designing elevating and conveying machinery and our Engineers are experts in solving handling problems. Let us suggest an equipment for your needs and quote prices for your consideration no obligation incurred.

WE MANUFACTURE

lce Elevators and Conveyors. Ice Tools, Holsts, Ice Crushers, Crushed Ice Carts, Conveying Machinery for all purposes, Wagon Loaders, Buckets, Chain, Chutes, etc.

Crushed Ic and Salt Elevators



Gifford-Wood (o.

WORKS: HUDSON, N. Y. New York Buffalo Boston

Chicago

CHAMPION

<u>ICE</u> BREAKERS

Important as its capacity, is the reliability of a breaker in doing thoroughly and surely the work for which it is built. Every CHAMPION is designed and built specially for its work—for rough, hard work. The practical elimination of ice breaker troubles where CHAMPIONS are installed is its best claim to breaker subscriptive.

CHAMPION NO. 11, shown here, is designed for the most modern ice cream factory and has a capacity of 40 to 60 tons of broken (not crushed) ice per hour. It can be set on the floor or hung from the ceiling. Motor driven, either belt or chain drive; motor protected by an extra heavy reinforced iron hood. Use drives its diamond pointed teeth more firmly its chair content and the second of the content of the con



into their sockets, yet they are easily removed for sharpening. Many other special features fully explained in our catalogue—send for your copy now.

Other sizes to meet the needs of any plant.

Write for descriptive catalogue and prices now,



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either case is bound to be a more uniform temperature to the constant check of the control to the
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time Funch cost to more than for an ordinary recorder alone.

corder sions. Shaple, direct and positive in their action. Shaple, direct and positive in their action. Shaple, and the present of the properties of the pro

Send for Columbia Recording Thermometer Cata-log II-16,

Schaeffer & Budenberg

Makers of instruments for the pro-motion of efficiency in Power Pinnt and Manufacturing Departments.

Berry and South Fifth Streets, Brooklyn, N. Y.

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Los Angeles Philadelphia Pittsburgh

San Francisco

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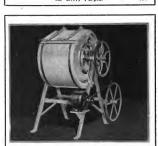
successfully, satisfactorily and consistently meet usual and unusual temperature needs in the Ice Cream Trade.

Tycos Straight Stem Thermometer

Rugged case affords protection for tube and scale; insulated to prevent frosting over scale, so readings are easily made at a distance or in poor light. Strong wrench head to withstand strain. Seven inch scale; range, runs 20° below to plus 120°. Stem, including threading, 134". Fits 1/2" or 34" pipe. Ask for catalog describing all Tyces Instruments for the Ice Cream Trade, Specify your needs.



There's a 500 or 250 Temperature Instrument for Every Purpose 754



Make Butter Out of Your Surplus Cream

Send Coupon for Low Churn Prices

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Send Low Minnetonna Home Buttermaker Prices

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SPECIALIST FOR

DAIRY AND ICE CREAM BUILDINGS AND EQUIPMENTS CONSULTING SERVICE BASED ON EXPERIENCE PLANS. SPECIFICATIONS AND INSPECTION WORK



Condensed Milk Machinery

THE BETTER KIND

We teach you to make condensed milk

C. E. ROGERS
Builders of better Condensing
Equipment
8731 Witt Street
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F. M. WOODFORD ENGINEER AND ARCHITECT

Plans, specifications and supervision of buildings and equipment for ice cream and dairy plants. Tests and examinations of existing plants.

Preliminary estimates and information free and without obligation.

90 West Street, New York City

Copper Condensing Pans FOR ALL CLASSES OF MILK



Large amount of heating surface which is very low in the pan. Large steam inlets and outlets for utilizing exhaust steam.

Get our Blueprints with Specifications and Prices.

GROEN MFG. CO., Inc. 4529-37 Armitage Ave. Chicago, U. S. A.



MOJONNIER VACUUM
Condensing Unit

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MILK ENGINEERS

739 W. Jackson Boul.

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BRANCH SALES OFFICES.
New York, 172 W, 77th St.St. Louis, 4931 Margaretta Av Atlanta, 136W. Peachtree St. San Francisco, 29 Balboa St

GUARANTEE OF ECONOMY IN PLANT BUILDING AND OPERATION



New Plant of the Overton Creamery Co., Allegan, Mich.

WHEN you extend the production facilities of your ice cream plant to meet the demands for increased business volume, do you want the plans worked out and the construction done under your personal direction? If so,

McCormick Service Meets Your Requirements Exactly

Ready-made blue prints must necessarily be incomplete so far as your par-ticular work is concerned, and they usually leave a great many important details to your imagination and to the discretion of the contractor unless you personally

to your imagination and the unscretion of interest control in the system of the contractor university of the control in the contractor and construction foreman. Nothing is left to the imagination or the discretion of the contractor, whose only interest is to complete the work. Whether you are on the job or not, there

only interest is to complete the work. Whether you are on the job or not, there are no deviations.

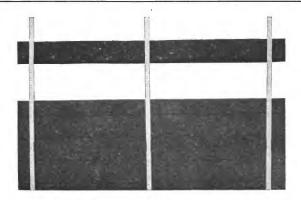
The money actually saved by using McCORMICK SERVICE, as compared to the numerous ready-made plans offered builders, is a remarkable feature. In addition to the detailed building information contained in McCORMICK SERVICE plans, you get the advantage of actenitie construction and practical ice cream plant operations which will save you dollars every day during the life of the plant.

McCORMICK COMPANY, Inc.

Architects and Efficiency Engineers for the Ice Cream Industry

PITTSBURGH Century Building NEW YORK 41 Park Row

Construction Executed by Your Local Contractor Under the Direction of Our Visiting Superintendents



The Same At Both Ends And the Middle

YOU can't expect to get first-class insulation at reasonable cost with sheets of corkboard that are under or oversize, or out of square, or warped, or that have beveled edges or corners. At best such insulation will contain open joints and pockets where moisture will condense and frost collect. To make even a passable job, the waste in cutting will be excessive and the labor cost out of all proportion.

Nonpareil Corkboard Insulation

For All Cold Storage Rooms

possesses the decided advantage of unusually low installation cost. This is due largely to its invariable uniformity in all dimensions—the result of a perfected manufacturing process backed by scrupulous, uncompromising inspection. Nonparell Corkboard requires no sorting or trimming. It cuts with a minimum of waste, and sets up true and solid with clean, close joints. The saving in waste and labor alone will often more than offset any difference there may be in price, and the advantage of tight insulation is, of course, worth infinitely more.

Complete detailed specifications and much other valuable information on cold storage construction and the proper methods of installing insulation are contained in the 152-page book, "Nonparell Corkboard Insulation," which on receipt of request, will be sent to you without charge.

Armstrong Cork & Insulation Co., 109 Twenty-fourth St., Pittsburgh, Pa.

Alto ammigativers of Mongaril Corb Covering for bring and ammine line, cooling, tanks and cold the control of t

CORK INSULATION

New York, 50 Church St. Chicago, Westminster Bidg, Philadelphia, 1042 Ridge Ave. Boston, 268 State St. Cleveland,

BRANCHES.

The best Insurance against Losses of Profits

UNITED CORK COMPANIES

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Warren & Balley Co., Los Angeles, Cal, leattle Asbestos Factory, Scattle, Wash.

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Daily Capacity-One Hundred Thousand Feet

Vogt

FORTY years of constructive service have given this name a prestige of which we are justly proud. Vogt Refrigerating Equipment for Ice Cream production assures Efficiency, Economy and Safety. It operates on exhaust steam, and has no rapid running reciprocating machinery.



HENRY VOGT MACHINE COMPANY

INCORPORATED

Louisville, Kentucky

We manufacture Ice Making and Refrigerating Machinery, Drop Forged Steel Valves and Fittings, Water Tube and Horizontal Return Tubular Boilers, Oil Refinery Equipment. Write for Bulletins,

Branch Offices-New York, Chicago, Tulsa, Okla.

If this small vertical Refrigerating Machine is not large enough to handle your Ice Cream Trade, REMEMBER we make REFRIGERATING MACHINERY of any capacity desired.

THE VILTER MFG. CO.

888 Clinton Street

Milwaukee, Wis.



Refrigerating Temperature

For Ice Cream Making

Should be easily controlled and accurately maintained. Hundreds of ice cream makers have proved to their own satisfaction that this is best accomplished by a *CP* Refrigerating System.

This is because CP Refrigerating Machines operate with practically no clearance in cylinders at high speeds, thus adding to the economy and efficiency of operation. Furthermore they are installed by CP ice cream plant engineers who have an intimate understanding of every phase of ice cream plant refrigeration requirements.

CP Refrigerating Machines are built in all sizes, from 3/4 ton up, and either horizontal or vertical as desired.

Please write for "Story of Refrigeration" booklet, No. 883-K.



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in Capacities from 1 to 50 Tons Available for Immediate Delivery at Exceptionally Attractive Prices

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The Larsen Plant Was Awarded The Grand Prize

Panama-Pacific International Exposition

Hundreds of Satisfied Users are Pleased with the Reliability, Simplicity and Economy of Operation of Larsen Ammonia Compressors

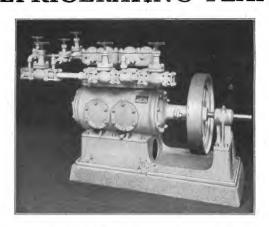
Special Discounts Quoted for Re-Sale

JOHN M. LARSEN

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NORWALK REFRIGERATING PLANT



THE care with which Norwalk engineers have designed for economy and flexibility of service is well exemplified in the refrigerating plant illustrated.

This 4-cylinder, 4-ton Norwalk has a by-pass system of valves and piping, so that two of the cylinders can be applied to any given refrigerating task, while the other two are used simultaneously for a different phase of refrigeration, perhaps in another department. When desired, all four cylinders can be employed for either branch of work. The precise results needed are obtained simply by opening or closing the valves.

Norwalks are made in capacities up to 25 tons, for all refrigerating and ice-making requirements. Let us tell you about their new efficiency.

Write for Bulletin 6

THE NORWALK IRON WORKS COMPANY

Pioneer Builders of Compressors

SOUTH NORWALK CONN.



Ask for a copy of our List of Users covering 48 pages of satisfied customers—also your copy of Ice and Frost. New editions



There is a FRICK Machine for every refrigerating purpose all types: Vertical— Horizontal — Absorption.

Ice and Frost Bulletin No. 3 is now obsolete

Just Off The Press Ice and Frost Edition A-8 ICE MAKING SYSTEMS

This 68-page Bulletin gives a brief description of the theory of refrigeration as applied to Ice-making, also illustrates and describes FRICK Raw Water Ice Making Systems. Copy mailed on request



New York, N. Y. Philadelphia, Pa. BRANCHES: Baltimore, Md. Pittaburgh, Pa.

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SANITARY, ECONOMICAL and RELIABLE
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Lowers cost of production-Increases output



YORK MANUFACTURING CO.

Ice Making and Refrigerating Machinery Exclusively

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Sharpless-Hendler Ice Cream Company's Plant at Wilmington, Delaware



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WE DESIGN AND INSTALL COMPLETE ICE CREAM AND DAIRY PLANTS

DIVIDENDS



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A Plant That Has Always Made Good

Both Horizontal and Vertical Types
In sizes from 1 to 1000 tons capacity
We specialize in Ice Cream and Dairy
Plants

Send for information blank, if you desire quotations

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Think of it NOW!

Send today for the Phoenix catalog—a nontechnical, instructive booklet on refrigeration.



Do not delay—Now, before the warm weather and the rush season come, investigate Phoenix.

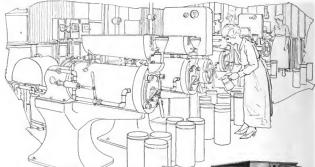
Good refrigeration means not alone good equipment, but carefully engineered, thoroughly practical installations. You should investigate Phoenix Refrigerating Equipment, Phoenix service, economy and efficiency.

THE PHOENIX ICE MACHINE COMPANY
2708 CHURCH AVENUE, CLEVELAND, OHIO



The Buyer's Page





U. S. Brine Freezer

The U. S. Brine Freezer is the culminating result of years of experience in design and manufacture of Brine Freezers.

Experience has shown the need of heavy design throughout, with ample bearings, large gears and adequate lubrication.

We submit the U. S. Brine Freezer as the best example of Heavy Duty Freezer Construction yet offered the trade.

Belt Driven Machines can be easily converted to motor driven machines, in your own factory if you desire. Three Horse Power motor, with 2" silent chain drive is furnished. Entire adjustment of the chain can be made by means of the lock muts fitted to the supporting rods under the motor table.

Removal and replacement of cover, and of the double dasher, exemplifies the thought that has been placed by the designer on ease of operation.

Note the knurled nuts on the cover that serve ashandles and are so fastened to the cover that they can never be mislaid. Also notice the tripod which holds the dasher firmly, overcomes wear and prevents buckling caused by thrust of dasher.

By all means investigate this freezer. Orders are now being booked in large number for immediate delivery. Prices and catalog on application.





A.H.Barber Creamery Supply Co. 310 W.Austin Ave., Chicago, U.S.A.



CONTINENTAL

Direct Expansion Ice Cream Freezer

SAVES TIME

You can start freezing ice cream at the same time you start compressor. No Delays.

Isn't this a big item?

Freezer has right temperature at all times if compressor is running.

No wait for brine to cool.

You can freeze a batch in jig time.

We also manufacture a full line of refrigerating machinery.

CONTINENTAL MACHINERY COMPANY

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Built for the Freezer Room

Air tight, water tight, steam tight, sensitive working parts entirely enclosed. Ruggedly built to withstand hard usage in the freezer room.

Mojonnier Ice Cream Overrun Tester

accurate and instantaneous method of testing the overrun while the ice cream is still in the freezer, enabling the opcrator to control his output.

Sold direct or thru your jobber, Write for Hustrated circular,

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ionnier Bros. Co.

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BRANCH SALES OFFICES, wr York, 172 W. 77th St.St. Louis, 4931 Margaretta Av lania, 136W, Peachtree St. San Francisco. 29 Balboa St



You can get this freezer in 50 or 100 quart size.

It is modern and right up-to-theminute.

Mail Coupon for Full Facts and Low Prices

COUPON I I'T J.

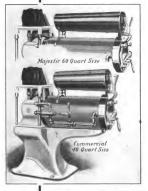
DAYIS-WATKINN DAIRYMEN'S MFG. CO.,
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City State

Lower Your Cost Of Manufacturing Ice Cream

Largest Range of Sizes

I' S. Heavy Duty Freczers can now he had in the Largest Range of sizes ever offered to the ice cream trade. You considered to solve your production problem. Installing a freezer of the proper better quality of ice cream, quicker deliveries, and a saving in investment.



The U. S. HEAVY DUTY FREEZER WIII Help You To Meet All Competition



Note the heavy, rugged construction of genr shaft and housing.



HINGED CYLINDER COVER

HINGED CULINDER COVER
The hinged cylinder cover, shown above is now stardiard equipment on all sizes and the control of the control of the cover of

SPEED AND CONVENIENCE IN CLEANING

Improve the Quality and Increase the Quantity

Can you control the price for which your ice cream selis-make it anything you like? Not much! But you do have something to say about the quality and the cost. You know that the better the quality the easier it selis. You also know that the lower your cost the bigger your profits.

Quality and cost depend not only on the materials used, but also on the equipment, since the equipment determines the cost of power, labor, repairs, depreciation and the space required. The most important part of the equipment, insofar as determining quality and cost are concerned, is the lice eream freezer itself.

The U. S. Heavy Duty Freezer

delivers the finest grade of delicate, velvety, smooth-grained ice cream. It delivers it in large quantities, not only because of the large variety of sizes in which it can be had, but also because it is quick in operation, and extremely easy and convenient to handle. Being realing a heary dury mackine, it lasts longer and seldom requires repairs.

Overrun

It is important to accurately control overrun. With a U. S. Freeser you can accurately control the, swell to get just the overrun you want. Many wide-awake manufacturers, using U. S. Heavy Duty Freezers, have regularly secured an overrun of 100%, and even more if they so desired. They have successfully built up businesses with excellent reputations for uniformity and quality of product.

Get Our Circular On "How To Tell A Good Freezer"

It tells how the U. S. Heavy Duty Freezer saves labor, power, time, repairs, investment, depreciation and manufacturing space. It tells about the automatic batch control, roller bearings, rapid vertical idischarge, lesk-proof brine cooling system, the all-bolted-together unix construction, and many other exclusive advanced features. The price is right down now. The time for action is here:

The U. S. Freezer and Machine Corporation 270 Union Avenue, Brooklyn, N. Y.

Representatives and distributors in all parts of the United States and Canada.

The real truth Never grows old.

The H. H. Miller Industries Company

Were first to-

Revolutionize—Standardize Successfully develop Brine Ice Cream Freezers.

Our freezers are-

Thoroughly durable—Completely efficient Highly economical—Absolutely sanitary.

Economy means-

Good design—Accessibility of parts
Modern production methods—Choice materials
Skilled labor—Longest experience.

Efficiency means-

Less power to operate—Desired yield More rapid freezing.

Our freezers are the-

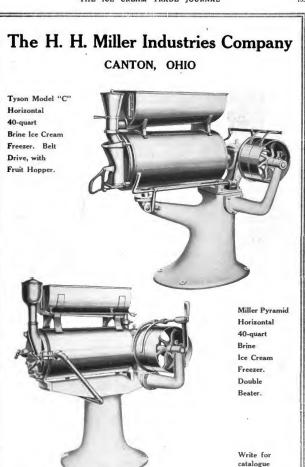
Greatest bargains—Greatest money earners Longest wearing—Simplest of construction.

We manufacture under original Patents.

We infringe nobody's rights.

We pioneered the brine ice cream freezer, and today we still set the standards for a host of imitators.

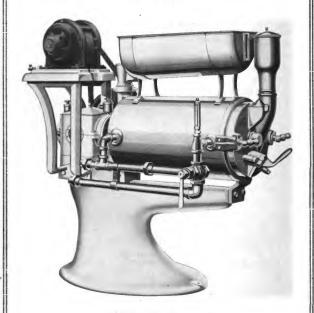
The H. H. Miller Industries Co. CANTON, OHIO



and prices.

THE H. H. MILLER INDUSTRIES CO.

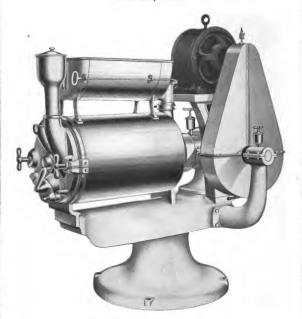
CANTON, OHIO



"THE MILLER" LIBERTY
HORIZONTAL BRINE ICE CREAM FREEZER.
DOUBLE BEATER. 60 and 120-QUART.
MOTOR DRIVE ONLY.

THE H. H. MILLER INDUSTRIES CO.

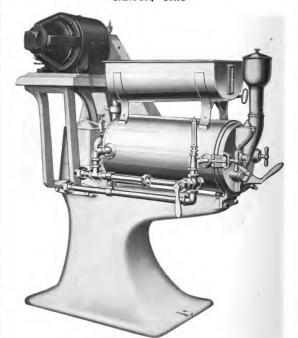
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"THE MILLER" PYRAMID
HORIZONTAL BRINE ICE CREAM FREEZER.
DOUBLE BEATER. 80-QUART.
MOTOR DRIVE ONLY.

THE H. H. MILLER INDUSTRIES CO.

CANTON, OHIO



"THE MILLER" ANVIL BASE. HORIZONTAL BRINE ICE CREAM FREEZER. DOUBLE BEATER. 40-QUART. MOTOR DRIVE.

Hear ye! Hear ye!

June 25, 1915

COMMON PLEAS COURT STARK COUNTY, OHIO

The H. H. Miller Industries Company is successor to The Miller Pasteurizing Machine Co., which, in order fully to protect the rights acquired by it in the property and business, including the good will of the business, of The Jono Company, joined, as plaintifi, in a suit in the Court of Common Pleas in Stark County, Ohio, against The Tyson Company, The Advance Dairy Machinery Company, and Frank Tyson, among others, as defendants. Upon the issues joined the Court has found in favor of the plaintiff and against The Tyson Company, The Advance Dairy Machinery Company, and Frank Tyson among other defendants.

As a result of the decree in our favor, the defendants, The Tyson Company, The Advance Dairy Machinery Company and Frank Tyson are now enjoined, among other things, from manufacturing or causing to be manufactured, any ice cream freezers covered by Letters Patent of the United States owned by The Tyson Company at the time of the sale; from filling or supplying any order for repairs and parts for such Tyson ice cream freezers; and from doing any act or thing which will directly or indirectly interfere to any extent with our exclusive enjoyment of the right, license and privilege to make, use and sell all devices covered by the claims of such Letters Patent.

They are also now enjoined from doing any act or thing which will directly or indirectly interfere to any extent with our exclusive enjoyment of the business or good will of the business owned by The Tyson Company or Frank Tyson, jointly or severally, at the time of the making of the agreements of sale; and from affirmatively doing any thing to cause the public or trade to believe that The Advance Dairy Machinery Company is the successor in business to The Tyson Company.

The H. H. Miller Industries Company, alone is licensed to make Tyson freezers. It is now in possession of the manufacturing equipment, stock of material, etc., necessary to enable it to continue the Tyson line. We are manufacturing, intend to continue manufacturing and are prepared promptly to furnish Tyson freezers and parts and supplies therefor, maintaining the established standard and quality of product.

We also are alone authorized to fill orders for parts, repairs and supplies for Tyson freezers and are perpared to do so promptly and at reasonable prices.

THE H. H. MILLER INDUSTRIES CO. CANTON, OHIO

ROCK BOTTOM PRICES!

FORT ATKINSON ' HORIZONTAL ICE CREAM FREEZERS



THESE are generally accepted as the most successful freezers in the country. The construction of the dasher and cylinder results in a product that is smooth, velvety and with controlled overrun. It is quick emptying and rapid. It is a heavy duty machine and will give lasting service under severe working condi-tions. Simple in con-struction and easy to operate. Designed to be quickly and thoroughly cleaned. Made in 40 and 100 quart sizes. Either aluminum painted base or white vitrified porcelain enameled.

The Ft. Atkinson Freezer is endorsed by such concerns as Brever of Philadelphia who has 34; Telling-Belle-Vernon of Cleveland who have 125; Bridgeman -Russell of Duluth who have 19 and many, many others.

Please write for prices mentioning capacity and kind of drive desired.

CAN WASHER AND STERILIZER



HE Ft. Atkinson Horizontal Ice Cream Can Washer washes and sterilizes at the same time. Both inside and outside of cans are washed with brushes.

After washing, the can is inverted over the rinsing and steaming jet, where by simply operating one lever gate valve it is rinsed with hot scalding water and followed by live steam which sterilizes

it. "Machines are shipped equipped with brushes. On all sizes over the 1 brush machine two men can work at the same time. The No. 1, 2 and 3 have sterilizer at one end only. Larger sizes have are: sterilizers at both ends.

These machines are simple construction. Workmen in construction. like to operate them. Made of steel, heavily galvanized and designed for heavy, last-ing service. Operated by a 1/2 H. P. Motor.

SPECIFICATIONS AND PRICES F. O. B. Chicago

Width	Length	Price
57	40	\$250
	59	325
57	78	400
5.7		500
57		600
57	142	700
When ans to b	ordering se washed	mentlo
	57 57 57 57 57 57 57	57 40 57 59 57 78 57 104 57 123 57 142

CAN TRUCK AND DRAINER



ONSTRUCTED tirely of steel.

Handles cans and covers. It will be found a convenience and time saver about an ice cream plant for draining cans and covers, molds, etc., and for carrying them about the plant. The "V" shaped top or upper deck for covers is made of interwoven flat band iron and is convenient for holding the covers of the cans. Cans themselves are stored below.

The wheel at each end of The wheel at each end of truck is smaller than the two center wheels. Therefore the truck moves on three wheels which enakes it easy to turn. Will run in either direction. It is constructed entirely of heavy steel and will last indefinitely. Is built over-

strong wherever strength is needed and such parts as are subjected to heavy stresses and strains are strongly re-inforced. Will not get loose and wabbly at corners.

PRICES AND SPECIFICATIONS F. O. B. Chicago

Size	of l	Body		
Length	Width	Height	Height Overall	Price
66"	36"	53"	6214"	\$125.00
1m	medi	ate :	hipments	can be

THE CREAMERY PACKAGE MFG. COMPANY

Creamery Machinery Milk and Cream Handling Machinery Cheese Making Machinery

SALES BRANCHES-(Write to nearest one) Chlengo, 61-87 W. Kinsie St Beffalo, N. Y., 133-137 E. Swan St. Ransas City, 1408-10 W. 12th St. Minneapolia, 318 - 320 Third St. N. Omaha, 113-115-117 S. Tenth St.

Philadelphia, 1907 Mar-ket St. Portland, Ore., 6-8 N. Front St.

San Francisco, 699 Bat-tery St. Toledo, 119 St. Clair St. Waterloo. 406-8 Syca-more St. Ice Cream Making

Machinery Refrigerating Systems Dairy Machinery and Supplies

THE C-B CALENDAR













We have enough equipment in our warehouses to create a good many complete ice cream plants—big or little.

"Shopping around is all right if there's anything to be gained, but you use up a lot of valuable time which cannot be ignored. Our prices are always as low as our best-quality goods will allow; and the "stung" experience is alsolutely an unknown quantity with our customers.

Name what you want and we'll see that you get it—right quality, right price and right away.

We'll cheerfully quote you on your requirements without the least obligation,











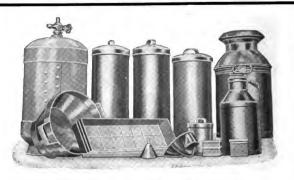




CHERRY-BASSETT COMPANY

PHILADELPHIA

BALTIMORE



Working Overtime

YES

We are actually working overtime Folks tell us business is bad Not With Us

THE REASON

QUALITY SERVICE



Keiner-Williams Stamping Co.

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Richmond Hill, N. Y.

MAY 2 (1 100)

THE ICE CREAM TRADE JOURNAL

Vol. XVII

No. 5

A PRACTICAL
HELPER
FOR
ICE CREAM
MANUFACTURERS
AND A
CHRONICLE
OF TRADE EVENTS



Official Organ of

The National Association of Ice Cream Manufacturers. The Association of Ice Cream Supply Meu. The Association of Ice Cream MT'rs of New York State, The Association of Ice Cream MT'rs of Pennsylvania. The Ohlo Association of Ice Cream Manufacturers. The Indiana Association of Ice Cream Manufacturers. The Association of Ice Cream Manufacturers. The Missouri Association of Ice Cream Manufacturers. The Missouri Association of Ice Cream Manufacturers. The Ice Cream MT'rs' Ass'n of West Virginia, Virginia Ice Cream Manufacturers' Association. Arkansas Association of Ice Cream Manufacturer. Minnesota Association of Ice Cream Manufacturers.



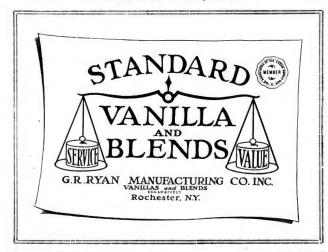
North Carolina Ice Cream Manufacturers' Association.

MAY, 1921

PUBLISHED MONTHLY BY THOMAS D. CUTLER 171 MADISON AVE. NEW YORK

TWO DOLLARS







For COFFEE ICE CREAM

Use

THE OLD RELIABLE

Arabian Coffee

Flavor

It has stood the test for many years

D. ABELSEN & SON, PROVIDENCE, R. L.

Successors to ABELSEN & SCOTT

1

HUDSON'S

FAMOUS

Ice Cream Flavor

Vanilla and Tonka Blend No. 52 Special

Finest Flavor Made

WE WISH TO CALL YOUR PARTICULAR ATTENTION TO OUR HUDSON'S ICE CREAM FLAVOR VANILLA AND TONKA BLEND NO. 52 SPECIAL (all Vanilla with a small per cent Tonka), a piece of goods which is especially adapted where Ice Cream is made for commercial purposes and shipping. The Flavor positively will not freeze out. Where Condensed Milk, Homogenized Cream or Pasteurized Milk is used it takes a very strong flavor to get satisfactory results and overcome the condensed or powdered milk taste, and Hudson's Ice Cream Flavor Vanilla and Tonka Blend No. 52 Special is especially adapted for this purpose. The small percentage of Tonka blended with the all Vanilla causes the extract to retain its fruity flavor when exosed to freezing.

TONKA BEANS ARE VEGETABLE JUST THE SAME AS VANILLA BEANS, and just as pure and wholesome, and, best of all, Vanilla and Tonka will give the desired results at half the expense.

Put up in 10-gallon kegs, half barrels and barrels only.

10-GALLON KEG	\$5.50	Per	Gallon
HALF-BARRELS	5.25	Per	Gallon
RAPPETS	5.00	Per	Gallon

Unequalled for the Ice Cream Manufacturer. One and one-half ounces give a mild, rich flavor, and two ounces a high flavor to what will make a 10-gallon batch of Ice Cream.

Let us send you a sample package, freight prepaid, to your city. You may return same at our expense if not entirely satisfactory.

Ice Cream makers who are looking for profit and reputation are using our Hudson's Ice Cream Flavor Vanilla & Tonka Blend No. 52 Special only.

The Hudson Manufacturing Company



Gabe S. Wegener, President

Vanilla Products

119-121 North Union Ave., CHICAGO, U.S.A.

Branches:-Vera Cruz, Mexico

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"Rapid Fire" Service

On Anything You Want

The acme of quality—at prices that fairly shout. All Reyam Brand high-grade fruit products packed for your convenience, and awaiting your call—whether half-gallon jar or 50-gallon barrel.

Solid packed fruit—keeping qualities guaranteed. Complies with ALL STATE AND FEDERAL PURE FOOD LAWS. Made on merit, sold on the basis of the biggest dollar's worth you ever received, or we make good to your satisfaction!

"Whole and Broken" Red Maraschino Style Cherries

Now ready for delivery—COLD PROCESS CRISHED STHAWBERRY, 1921 CROP, COLD PROCESS CRUSHED PEACH, FOR MAKING "MOUTH-WATERING" FRESH PEACH ICE CREAM

Crushed Pineapple SWEETENED, UNSWEETENED.

ORANGE FLAVOHED.
NOT ORDINARY PINEAPPLE!
TUTTI-FRUTTI—the quality kind.
CHOPPED WALNUTS—in rich maple flavor.
CRUSHED CHERRY PINEAPPLE COCOANUT COMBINATION.

NOTE.—No order too small for our attention. None too large for our capacity. Prices down in every case.

SPECIAL NOTICE

WE OFFER A JOBBING PROPOSITION ON OUR LINE OF CRUSHED FRUITS, CONCENTRATED SYRPS, MARSHMALLOW TO PPING PACKED IN GALLON AND HALF-GALLON CONTAINERS—THATWILLINERSTICE CREAM WANUFACTURERS EVERYWHERE.

The Cincinnati Extract Works

Canadian Office and Representative Walter S. Hayley, 26 Front St., E. Toronto, Can.

LOWNEY'S

Bulk Cocoa

(in Barrels)

Liquor Chocolate

for Ice Cream Manufacturers, Bakers, Lunch Rooms, Restaurants, etc.

Cocoa Powder Cocoa Butter

The Walter M. Lowney Co. BOSTON, MASS.

545 WILL REWARD BUYERS



A Strong-Smooth-Standard Flavor Two quarts to one hundred gallon mix \$3.80 per gallon--packed in 50 gal, barrels Write for sample

THE TISCO COMPANY WM. M. BELL, President

CHICAGO, U. S. A.
Original Manufacturers of VANISCO, MAPLEISCO, ROMAN PUNCH, VAN-ELL FLAVORS, FRUIT CONCENTRATES, MASS FLAVORS, EMULSIONS, TISCO PURE
FOOD CULCHES.

"Special Today—Mapleine Ice Cream"

Give customers Mapleine Ice Cream. Let them know on what days it can be bought and you will see demand for it grow.

Mapleine

Mapleine is a favorite flavoring with maple loving people and is used in a million homes.

Mapleine Ice Cream needs no introduction to customers who find Mapleine irresistible in home desserts. They know its maple flavor is unsurpassed.

The flavor will not freeze out and holds true—a perfect maple—no matter how long the ice cream is stored.

Made solely from vegetable materials and highly concentrated.

\$3 brings a quart bottle for trial.



Crescent Manufacturing Company

New York Office: 105 Hudson Street

SEATTLE, WASH.

CUSTARD FLAVOR

For Ice Cream

Ninety-two per cent of trial orders mailed throughout the country has brought in substantial stock orders.

The rich color of the Egg combined with the delicate and precise flavor of MOTHER'S Custard pies is reproduced in making a delicious Custard Ice Cream of quality distinction.

Working sample for a 40 qt. stand—36c or $1\frac{1}{2}$ c to flavor and color one gallon of cream when purchased in 5-gal, lots.

Acme Bisque, Shelbark or Walnut Flavor Working Sample for a 40-quart Freeze, 60c

Concretes of all flavors

Non-alcoholic Extracts

Acme Extract & Chemical Works
Branch: Toronto, Canada Hanover, Pa.

For Over 20 Years

We have *specialized* on Vanilla Extracts and Vanilla Compounds

We Can Improve Your Flavor and Save You Money

Proprietors of "VANOLEUM". The Original concentrated vanilla flavor. We warn the trade against worthless imitations having similar sounding names claiming to be "the same as Vanoleum"

Corrizo Extract Company

211-215 West 20th Street New York, N. Y.



Folks Eat Ice Cream Because They Like It

They Don't Like It and Don't Eat It

-Unless the Flavor Is Right

MAYBORN PRODUCTS ARE RIGHT

MAYFLOWER Ice Cream Flavoring

\$2.75 Per Gal, BBl, Lots \$2.50 Per Gal, 5 BBl, Lots



VAN-COM-TON

Ice Cream Flavoring
Unusually Mature
\$3.50 Per Gal. BBl.
\$3.25 Per Gal. 5 BBl.

Scientific methods apart from those heretofore employed insure a finished product which retains the Full Strength, Bouquet and Aroma of the raw material. An uncommon result in the business but the rule with Mayborn Products.

Send for Trial THE MAYBORN FOOD PRODUCTS CO. ARE YOU Order. 10 Gal. at barrel Price CLEVELAND, ONIO. ACQUAINTED?

PURE VANILLA EXTRACT

Write for Booklet "VANILLA"

ATLANTIC IMPORTING CO. 617-623 Eleventh Ave., New York

Scott's Coffee Flavor

101 Vanilla

EALIZING that the only sure foundation for a permanent business is merit in the products offered and delivered, I am devoting my best efforts and matured experience to the production of flavoring specialties to be sold strictly on their merits-flavoring specialties which are exactly as represented and which must satisfy the buyer before the sale is complete.

B. B. SCOTT 24-26 Ormsbee Avenue, Providence, R. I.



GENUINE FRUIT EXTRACTS

Atlas Certified and Atlas Vegetable Colors and No. 40 Carmine

11-13 E. ILLINOIS ST. CHICAGO

H. KOHNSTAMM & CO. 83-89 PARK PLACE

First Producers of Certified Colors

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2

"Give Me Caramala Ice Cream"

Never add any other flavor or color to Caramala for Caramala Ice Cream.

PRICES:

Less than 5 gals., \$7.00; 5 gals., \$6.75; 10 gals., \$6.50; 25 gals., \$6.25; 50 gals. and over, \$6.00.



Reg. U. S. Patent Office.

Caramala, an absolutely Pure Food Product, guasanteed under all Federal and State Food Laws. It is not an imitation of caramel or burnt sugar flavor. It is a new, distinct and better flavor.

CARAMALA is now virtually universally known throughout the United States and Canada, and its users are enjoying an ever-increasing CARAMALA business, embracing also its manifold combination uses.

CARAMALA SIERIT is recognized by ice cream manufacturers not alone in Caramale flavoring value, as evidenced by the instant and sustained CARAMALA response from the public, but also in the CARAMALA physical improvement in CARAMALA ICE CREAM, or any ice cream in which CARAMALA is present, even in a less amount than the full flavoring requirements, as in CARAMALA NUT ICE CREAM, CARAMALA ICE CREAM PUDDING, etc.

CARAMALA, a fluid, requires neither waiting nor preparation.

CARAMALA ICE CREAM is always the smoothest and most firm ice cream in comparison with any other ice cream made from the same stock mix, and hardened under identical conditions.

Directions:-Use one ounce CARAMALA to each gallon in your mix, or full four ounces for ten gallons of CARAMALA ICE CREAM.

Send in your trial order, and if any CARAMALA claim we make is not sustained by your CARAMALA experience, simply return us the shipment within 30 days, at our expense. We make this offer on account of our certainty of your satisfaction, but we want you to feel positive assurance in sending in the trial order.

CARAMALA signs commensurate with order size supplied on request, as well as CARAMALA recipes.

Order direct or through any of the following well-known firms:

Use the New Concentrate Eliminating All Waste

NEW MEXOCINE

Bean Vanilla, Vanillin, Coumarin and Tonka Flavors

IT IS ECONOMICAL

Use quarter ounce or dessert spoonful to flavor 10 gal, batch Ice Cream. Use quarter ounce or dessertspoonful to flavor 100 ib batch candy.

57.00 per pint

5 pints \$6.75 per pint 10 pints \$6.50 per p 25 pints 6.25 per pint 50 pints 6.00 per p TERMS: 2% 10 DAYS 30 DAYS NET Why pay for unnecessary alcohol when it is absolutely worthless from a flavoring standpoint? Why pay freight on water?

Samples on Request



REX EXTRACT CO.

257 Pacific Street

Brooklyn, New York City

19

14

291

Service .



HERE IT IS!



A special Ice Cream Vanilla we have worked three years to perfect.

A strong vanilla that will not freeze

ont.

A compound that leaves a nice taste

Three ounces to a ten-gallon batch gives a rich, smooth cream with a real vanilla flavor.

See our salesman or write to us for a sample of this vanilla and our new complete Ice Cream Price List,

H. A. JOHNSON CO. 221-227 STATE STREET BOSTON

NEW YORK

in your mouth.

PROVIDENCE

FLAVOR

with NATURAL VANILLA

at 1 10 cents per finished gallon

RESULTS are positive with

Vanilla Isolate

a Concentrate made from high class Vanilla Beans only. And—its construction is such that it Freezes In.

You are protected by our unconditional guarantee of satisfaction.

Write Us Now.

FOOTE & JENKS

Expert Flavor Specialists

JACKSON : : : : MICHIGAN

Van-Mul

The King of Ice Cream Vanilla Flavors

of Mexican Beans Fortified

14 Oz., 7c. Players, 51/2 Gai. Mix of Ice Cream 3 Drams, 10c. Players, 100 Pounds of Candy

MANY SATISFIED USERS.

Order Now.

Guaranteed to please or money back.

DOWNEY-TURNQUIST & CO.

Manufacturing Chemists and Importers

Makers True Fruit Extracts SODA WATER FLAVORS

537 N. Dearborn St. CHICAGO, ILL.



Warner-Jenkinson Co.

St. Louis

Manufacturers of Ice-Cream Makers' Supplies and Certified Food Colors



Are you using

Red Seal Milk of Orange

for flavoring your orange ices? If not, you are missing out on a good thing. One to one and a half ounces in ten gallons of finished product does the work. Easy to use. Very economical.

Are you using

Red Seal Giant Vanilla

for flavoring your Vanilla ice cream? If not, you are again missing out. "Giant" is all that its name implies. The only thing small about it is the price.

Are you using

Red Seal Purity Powder

for stabilizing your mix? If not, you don't know what good ice cream is. You can cut down on Condensed Milk when using Purity and obtain an altogether superior product.

Are you using

Red Seal Certified Colors Red Seal True Fruit Extracts Red Seal Marshmallow

If not, read

THE BOTTLER'S AND ICE-CREAM MAKER'S HANDY GUIDE

It tells you all about RED SEAL GOODS and how to make quality ice cream.



Warner-Jenkinson Co.

St. Louis



RIPPEY'S Powdered Foamoline

(TRADE-MARK REGISTERED)

Specially Prepared

For Manufacturers

ICE CREAM,

Sherbets, FruitFrosts

AND Water Ices



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Fo a moline with the sugar while dry, add your cream or milk and it is ready for the Freezer,

GivesyonriceCream

FOR A LIMITED TIME WE WILL SEND BY MAIL, POST-AGE PAID, Full ½ pound on receipt of 25c. Also our Formulas for making lee Creems, Shorbets, Fruit Frosts, Water Less, Soda Water Syrup from Canned Fruits, Mailed Free on receipt of name and address. Caution: Ripper's Powders framoline is packed in one pound boxes with registered trade-mark and signature of William Rippey on every box. Never sold is bulk.

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No. 108 E. Second Street CINCINNATI, O.

PROVE FOR YOURSELF

THAT

COMFORT'S

Mexican Vanilla Bean and Vanillin

(DRY FORM)

IS THE

PERFECT PRODUCT

Write for working sample, stating whether you wish it with or without seeds showing.

J. W. COMFORT

Aschenbach & Miller, Inc. 400 North Third Street Philadelphia, Pa.

WILL NOT FREEZE OUT

NO ALCOHOL

VANILLA EXQUINTA

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Finer, Stronger and Better Than VANILLA EXTRACT

ECONOMICAL

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Write today for prices and particulars

GROWN FRUIT AND EXTRACT CO., Inc. 418-420 W. BROADWAY :: NEW YORK CITY

The Worth of a Service

Years of study and experience are priceless assets in business. We give the benefit of our years and experience to each of our customers. Our experts are glad to study your products and to help you in selecting the right sugar to produce them most economically and to make them of highest quality. From our line of cane sugars, the largest in the world, you can always make the right selection.

American Sugar Refining Company

The Most Complete Line of Sugar in the World



The Reason for Cerelose

Successful ice cream manufacturers use Cerelose in conjunction with cane sugar, because Cerelose emphasizes the richness of the butter fat.

Butter fat is not only the most expensive item in ice cream making but the most important in relation to maintaining high quality.

Ice Cream manufacturers, in this fact alone, can see why Cerelose is now being preferred everywhere.

Higher digestibility will be given to your ice cream with the help of Cerelose. The flavor and texture will show a decided improvement.

Cerelose sells for several cents less per pound than cane sugar.

CORN PRODUCTS REFINING COMPANY

17 Battery Place, New York City

Note:-Formula cheerfully furnished upon request.



Sweeten ice cream with Franklin Crown Granulated



To secure the snowy whiteness, perfect mix and full degree of sweetness that means quality in ice cream.

The Franklin Sugar Refining Company

PHILADELPHIA

"A Franklin Cane Sugar for every use"



Boston

CRYSTAL GELATINE

IN PACKAGE OR IN BULK

The most satisfactory stabilizer that can be used. Made in the largest and best equipped gelatine plant in America. Free from injurious chemicals or other impurities. A standard product most economical in the long run.

If you are particular—Specify CRYSTAL GELATINE.



121 Beverly St., Boston, Mass.

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Established 1879

Gelatine is the most efficient of all stabilizers for Ice Cream

WHITTEN'S GELATINES Are Standard

Guaranteed to Comply with all National and State Page Food I may

STRENGTH, PURITY AND UNIFORMITY GUARANTEED

MANUFACTURED BY

J. O. WHITTEN COMPANY

Woolworth Bldg. NEW YORK CITY Main Office and Works
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DELFT

HAROLD A. SINCLAIR, 160 Broadway, NEW YORK

Some of the REASONS WHY you will want DELFT GELATINES

LOWEST in BACTERIA

No Objectionable Odor to Overcome

Requires Less Flavor to a Batch

Perfect Standardization

Purest as analyzed by the American Official Method

FREE OF SULPHUR DIOXIDE "Price is a relative term-quality always a concrete fact."

EVERY one of the "Reasons Why" in the column on the left has been proved by actual test. In buying Delft Gelatine, you are assured of

QUALITY BEYOND QUESTION ECONOMY WITHOUT EQUIVOCATION



Anne O.S.

Middle-Western Distributors: Rockhill & Victor 180 N. Market St., Chloago, Ill. South-Western Distributors: Blanke Manufacturing & Supply Co. 214 Washington Ave, St. Louis, Mo.



Manufacturers of Pure Food Gelatines

Built on all the latest, up-to-date, labor saving lines to produce always a uniform article.

Our raw stock supplied by our owners assures this.

Our Grades are of the highest quality obtainable, clear to the point of transparency, sweet, free of odor, and guaranteed to comply with all state and national pure food law requirements.

Its use insures good texture and a smooth cream.

A trial order will convince you that these are the best grades of gelatine in proportion to price that can be secured.

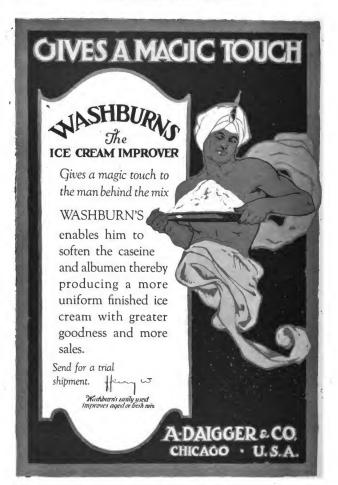
BRANCHES:

ATLANTIC GELATINE COMPANY

Hill Street, Woburn, Mass.

New York

Baltimore 1012 Union Trust Bldg. hicago Atlanta ulte 510 433 Healey Bidg. 18 No. La Salle St. San Francisco Room 240, Hansford Blk. 268 Market Street





It's the ultimate consumer you're aiming at. Once won, she's the mightiest advertising medium you can have. The quality, flavor, texture and velvety smoothness of ice cream depend largely on the purity and fineness of the gelatine you use.

Essex Gelatine for nearly twenty years has played a vitally important part in achieving these results for the ice cream industry.

ESSEX GELATINE COMPANY

Manufacturers
BOSTON, MASSACHUSETTS

Branch Offices and Warehouses

PHILADELPHIA

Branch Offices and Warehouses

CHICAGO SAN FRANCISCO

Ice Cream Decorations

featuring
DECORATION DAY and
FOURTH OF JULY
LEAVES, W/STEM—LACE PAPERS

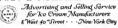
FANCY PAPER CASES
ICE CREAM MOULDS
(Imported and Domestic)
IMPORTED FRUITS, PULPS, JUICES,
ETC.

SCHALL & CO.
81 Barclay St., NEW YORK

YOU have the machinery to make good Ice Cream

WE have the machinery

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"TALBO"

THE PERFECT STABILIZER
FOR ICE CREAM

TRIED, APPROVED AND USED BY THE ICE CREAM TRADE FOR THE PAST FIVE YEARS

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THE PUREST OF PURE GUM
DIRECT FROM MILLERS TO CONSUMERS

WRITE Us

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FOR THE ICE CREAM TRADE



PURE FOOD BRAND .40
HERCULES .51
TRIUMPH .71
WHAT-A-JEL .95
A POUND IN BARRELS
F.O.B. NEW YORK

ORDER QUICK PURE FOOD QUALITY
FRESH NEWLY MADE GOODS

COCOA POWDER .0434

THE BAKERS' & CONFECTIONERS' CO. 286 FIFTH AVE. NEW YORK CITY E. A. KELLOGG, MANAGER

MI-SA-CO BRAND

Fresh Made—SPRAY MILK POWDER—Ask for yearly contract
Fresh Made—BARRELED CONDENSED MILK—Skim or Butter Fat
Fresh Made—GALLON SIZE EVAPORATED MILK—

Our Factories Brighton, Mich.—Lockwood, O.—Springboro, Pa. Clio, Mich.—Cortland, O.—Jamestown, Pa.

MILK PRODUCTS SALES CO., Engineers Building CLEVELAND, OHIO

Are you using the extor Reci



Ingredients:

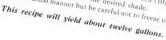
l gallon Grape Juice Juice of 40 Lemons 35 lbs. Sugar

5 ounces Textor Water sufficient to make Color (if desired)

- The method of procedure should be as follows: 1. Mix the Textor and sugar together dry.
- 2. In a mixing can place about three gallons of water. 2. In a mixing can prace about three gamens or water.

 3. Slowly pour the mixture of Textor and sugar into the water. Story: Pour the mixture of rextor and sugar into the water, stirring constantly as it is added and be sure Textor and sugar is 4. Now add the juice of 40 lemons.
- 5. Now add one (1) gallon Grape Juice.
- 6. Now add sufficient water to make up a total of ten (10) gallons. 7. Add sufficient color to give it the desired shade. 7. Aug summers come to give it the ussued snade.

 8. Freeze in the usual manner but be careful not to freeze too hard.





BROOKLYN, N. Y.

The public wants water ices that are smoother: and more novel in flavoring.

With Textor you can make water-ices that will keep for weeks without a sign of icy crystals, or separation, or watering down-you can make water-ices that dealers can repack repeatedly until every last bit is sold.

The Textor Book

gives fifteen novel sherbet and water-ice recipes. It points the way to the development of this profitable branch of your business.

> We will gladly send a copy on request

S. GUMPERT & CO. BUSH TERMINAL BROOKLYN - NEW YORK



Just as scientifically prepared soil gives the farmer finer, tastier apples—

Just so, does Gumpert's Improver give the manufacturer smoother, richer-tasting ice cream

THE man who raises big, luscious, top-price apples can't just plant trees and "leave the rest to chance." Instead, he must assist Nature and by every means possible, speed up her beneficial processes.

The manufacturer who wants to make a really superior ice cream can't just prepare his mix for ripening and let it go at that. He must scientifically assist the ripening process.

Over 2,000 ice cream manufacturers are regularly using

GUMPERT'S Ice Cream Improver

It changes ripening from a matter of days to a matter of hours, and makes the ice cream better ice cream.

S. GUMPERT & CO., Bush Terminal, Brooklyn, New York

To alliged by Goog

The Biggest and the ONLY New Idea in the Ice Cream World CARBONATION



PROF. W. P. HEATH, Discoverer of the Heathmade Carbonating Method of purifying ice cream. The biggest forward step in the history of ice cream.

THERE is something NEW in ice cream! Prof. W. P. Heath, a scientist whose life work has been better sanitation of food products, has discovered a method of freezing ice cream in a pure, sterile, germproof atmosphere instead of in common air.

This method, known as the Heathmade Carbonated Method, insures SUPER-PURITY. Put a 100% clean mix with a 100% clean atmosphere and you have a 100% clean ice cream, as against a 50% pure ice cream when frozen with common air.

By the Heathmade Carbonated Method you make, not only a much purer ice cream but a much better ice cream. The method is extremely simple and more than pays for itself.

No change in mix.

No change in manufacturing method.

No extra labor.

No expensive equipment.

Manufacturing ice cream by the Heathmade Carbonated method gives you

ABOVE ALL

A REAL ADVERTISING APPEAL with which to build business. The ONLY real advertising thought ever put into ice cream advertising.

Our plan of advertising Heathmade Carbonated Ice Cream builds consumer demand and dealer distribution.

WRITE TODAY

Write TODAY for PROOF of success in building new business, and our plan for increasing dealer distribution. A concrete plan you can use successfully. Write for it.

American Conservation Sales Co. Sole licensors of W. P. Heath Method for making carbonated ice cream.

1203 Rector Building, 79 West Monroe Street,

Chicago, Ill.

AMERICAN CONSERVATION SALES CO., 79 West Monroe Street, Chicago, III.

Please	send	me in	format	tion a	bout	Heath	made
Carbonat			and p	articu	lars o	your .	deal-
er distrib	ution	plan.					

Name	•	•	•	•	•	•	•	•	•	•			•	٠	•	•	•	۰	•	۰	٠	•	٠	•	٠	•	•	•	•	•	•	•	•	•	•	•	•	•	
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PULLY PROTECTED BY UNITED STATES PATEN

In this New McLaren "Real Cake" Cone we offer the trade a sugar-sweetened article that is in a class by itself.

It is scientifically designed to ship with a minimum amount of breakage, is distinctive in appearance, and at the same time possesses the superior eating qualities that have always characterized McLaren's Ice Cream Cones.

EXCLUSIVE FEATURES

1-Smoothly Moulded Ring Around Top. Strengthens top of cone. Prevents breakage when filling with ice cream.

Improves appearance.

2-The Name "McLAREN" Moulded in Rim of Cone.

Prevents imitation. Guarantees quality.

3-Breakage Protection Ring.

Prevents wedging action of cones in shinkeeps them from splitting and sticking to-gether.

Strengthens top of cone.

(Illustration shows how cones rest entirely on this ring. Walls of cones do not touch.)

This new Cone is the result of years of study and the investment of many thousands of dollars. The manufacturers have aimed to make the very best cake cone possible, and at the same time keep the price within easy reach of every retail dealer.

A high-grade "Real Cake" Cone, designed to stop the Breakage Evil. Priced extremely low. Try a sample shipment.

MSLAREN PRODUCTS COMPANY DAYTON OHIO

Western Distributing Station, Kansas City, Mo.







Hadaçone

Increases ice cream sales—because it makes the ice cream taste better!

It is serving ice cream and cake!

Every cone pure cake—uniform in thickness—baked all through. Tender, crisp and tasty—and keeps so indefinitely. No grease, coloring matter or preservative of any kind—

guaranteed.

Havacone is worthy of the best ice cream. Costs no more,—and pays bigger profits.

Prices and samples on request.

100 cones to the box—10 boxes to a shipping container—containing four color display card.

Breakage eliminated.

CONE COMPANY OF AMERICA

Third St. & Van Alst Ave. Long Island City, N. Y.

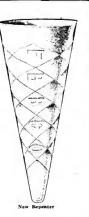


CONES

That Sell Ice Cream

We have added a New Cake Cone to our 1921 line, which is the acme of Flavor, Color, Crispness, and Shipping Quality. Years of experience as Bakers and Ice Cream Makers are reflected in the Big Repeaters, so called because they repeat wherever sold. Our facilities enable us to give the best of service. Secure our Catalog and Prices.

Cone Department, Cincinnati, Ohio
The French Bros.-Bauer Co.



NOW At Pre-War Prices



"The Standard of Quality"

Write for new prices and contract offer effective now

MERRELL-SOULE SALES CORPORATION SYRACUSE, N. Y.

"BEST"

EVAPORATED MILK IN GALLON CANS

Manufactured Especially For

Ice Cream Manufacturers' and Confectioners' Use

FINEST OUALITY

The beautiful flavor of the fresh milk concentrated and absolutely preserved in the air-tight can

NO SPOILAGE

NO WASTE

TWELVE YEAR REPEAT ORDERS OUR BEST REFERENCE NO PROFITEERING WRITE OR WIRE

AVISTON CONDENSED MILK CO., AVISTON ILLINOIS

MILK POWDER MERIDALE

MEETS THE SEVEREST TEST SUCCESSFULLY



Oungsdougou, Haute Volta, French West Africa. Via Dakar Senegal, March 10, 1921.

Via Daker Senegal, AYER & McKINNEY, March 19, 1921.
New York, N. Y. and March 19, 1921.
New York, N. Y. and sending you a small be been found to be a small be a smal

AYER & McKINNEY

39 S. Water Street, Phila.

188 Eleventh Ave., New York

Manufacturers of Whole and Skimmed Milk Powder of Quality

DISTRIBUTORS Jos. Middleby, Jr., Inc., 327-347 Summer St., Boston, Mass.

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Haines-Carpenter Dairy Products Co., 716 N. 18th St., St. Louis, Mo.

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Ice Cream Cabinets

The special construction of cabinets made by us insures durability and long life under all conditions.

THE PRICE IS REASONABLE

Send for Price List

American Retinning Co. 819-23 N. Lawrence St., PHILADELPHIA, Pa.



Fancy Molds

GET AND HOLD



BUSINESS



Send \$2.00 for Sample Fruit Flower Mold and lst us send you our complete price list.

FR. KRAUSS' SON 333 W. 18th Street, New York, N.Y. GRAPE



Cassell Center Molds



From One to Nought Used

ALL THE YEAR ROUND.

For BIRTHDAY PARTIES, WEDDINGS.

or ANY KIND OF AN ANNI-VERSARY You can have

ANY NUMBER FROM 1 to 99 IN A ONE QUART BRICK

Order through your JOBBER or

W. W. CASSELL, Patentee VINCENNES INDIANA

BUY

Your Bulk Condensed Milk and Skimmed Milk Powder

FROM US

We carry stocks of both of these products in practically all of the large cities in the country and are therefore in an exceptionally good position to take care of your wants.

Boner & Company

PRINCIPAL OFFICE: 608 So. Dearborn St., Chicago, Ill.

NEW YORK OFFICE:

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"SHIP CABINETS AT ONCE!"



Send Us This Wire for

Schroeder Perfection Cabinets

—and put our Service to the Test.

Our large reserve stock enables us to fill rush orders promptly.

"Insulation is the thing"

JOHN SCHROEDER LUMBER

WALNUT ST BRIDGE --- MILWAUKEE,WIS

We Make Prompt Shipments of

Plain Condensed Milk Concentrated Milk

Sweet Cream

Barreled Sweetened Condensed Milk

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OUALITY AND SERVICE

413 N. State St., Chicago, Illinois

SWEET CAR LOTS LESS FOR IMMEDIATE USE BUTTER or STORAGE

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BRYAN-DUVALL CO.

General Offices
105 Hudson Street

NEW YORK

Warehouse and Cold Storage 179 Franklin Street

WIRE -

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The Grand Rapids





True Economy



It is sometimes difficult to determine just what is true economy but not in the case of ice cream cabinets.

Here true economy lies in the ice conserving factor and the ability of the cabinet to stand constant usage over a long period of years. It is these attributes which have won for Grand Rapids Cabinets their high standing in the trade,

Manufacturers who furnish their customers Grand Rapids Cabinets have the satisfaction of knowing that in this particular matter they have done their utmost in the way of service.

Grand Rapids Cabinet Company

DESCRIPTION OF CHOCOLATE COOLER COMPANY

80-84 Alabama St., N. W., Grand Rapids, Mich.

New England Sales Office and Warehouse Merrow Bros., Inc. 44 N. Market St., Boston, Mass. South Eastern Sales Office and Warehouse Cherry-Bassett Co. 33 So. Charles St., Baitimore, Md.

North Western Sales Office and Warehouse
A. C. Black
515 Lumber Exchange, Minneapolis, Minn.

The C. Nelson Ice Cream Cabinets (Patented)

C. NELSON BRICK CABINET Patented May 8, 1906



42 QT. BRICK CABINET WITH ICE RAIL. Patents, May 8, 1996; Sept. 9, 1919





"Confessed the best when put to test"

The C. Nelson Patented Ice Cream Cabinets are especially adapted to Hot Climates
— South America, Honolulu, Philippines,
Cuba and all Southern States, where
others fail.

We've Got It On Them All

Because We Are:

- Specialists in the manufacture of Ice Cream Cabinets.
- 2nd. Have had 30 years' actual experience in the manufacture and keeping of Ice Cream, from which practical experience the Nelson Cabinet was evolved.
- 3rd. Nelson Cabinets are constructed of California Red Wood and White Cedar. Both sanitary and everlasting.
- 4th. For this reason they are proof against Rust, Brine, Leaks and Decay.
- 5th. They are Insulated with Granulated Cork, the best non-conductor of heat and cold known.
- 6th. They will save their cost in three months' service.
- 7th. They will keep Ice Cream in perfect condition 24 to 36 hours with one packing of Ice and Salt.
- 8th. They will last a lifetime.
- 9th. We manufacture Ice Cream Cabinets exclusively, and build but one grade—This we guarantee.

The 42-quart brick cabinet has a two-compartment container, thus giving the advantage of a double cabinet with single ice space.

ATTENTION

Responsible parties (particularly wholesale ice cream dealers) may order from 1 to 100 Nelson cabinets, place them in practical use, and after 30 days, if not entirely satisfactory, return at our expense for freight both ways.

CATALOGUE AND PRICES UPON REQUEST

C. Nelson Manufacturing Co.

23rd and Division Sts.

ST. LOUIS, MISSOURI



STOUT

STOUT CEDAR TUBS

are built to stand the racket and strain to which tubs are subject in use. Selected material, careful workmanship and the securely splined wedged double bottom make them last.

PERFECTION CABINETS

The cabinets with 100% insulation will outlast all ordinary cabinets, and give more economical service.

24 HOUR SERVICE

During the rush season we guarantee delivery on Perfection cabinets within 24 hours of order. Let us figure on your requirements.

STOUT CRATE CO. Des Plaines, Ill.

Chicago Office: 509 S. Wabash Ave.



An Inducement to the Ice Cream Trade



The abnormally low cost of the last shipment of California Redwood enables me to sell to the ice cream trade the cabinet shown above at a great reduction in price.

> Get my price and specifications before baying your cabinets.

HENRY SHULTZ

OFFICE AND FACTORS

24-26 Cherry Street, New York, N. Y.

Brooks Cabinets



Are constructed entirely of wood; best grade Gulf cypress for outer case and white cedar for inner compartments or tubs. Tabs scientifically treated by secret process making them absolutely water-tight. Cabineta insulated with granulated cork. Drain pipes and faucets of heavy brass. Saves almost 65 per cent, of ice, sait and labor.

BROOKS CABINET CO. 1000 Block W. 27th St., Norfolk, Va.

Uses Less Ice-

That's another big advantage of this popular "Economy" Ice Cream Cabinet. The insulation is so thorough and effective, and the construction so substantial that there is a marked saving in the ice you use. This

"ECONOMY" Ice Cream Cabinet

costs less to start with—and costs less to use. "Economy" Metal-lined Cabinets are lined with heavy galvanized Armeo Ingot Iron, with heavy cork insulation. Beautiful in design and long-wearing finish. One to four compartments—12 to 20 quarts. "Economy" Packing Tubs also save you money. They stand hard work. Prompt shipment if you order at once. Write or wire for catalog and prices.

> Homer Manufacturing Co. Homer City, Penna.



A "MAKE IT PAY" IDEA

If a pleased customer is your best advertisement, why lose the advertisement nine times out of ten?

Tie Your Name to Your Product



Our tin ice cream spoons with your name stamped in the bandle cost no more—probably less—than you pay for the plain kind, and they tell the customer who pleased him ten times out of ten.

WRITE FOR PRICES AND A SAMPLE

Our New Ice Cream Catalogue Will be Mailed Upon Request



Freezers; tools; cans and carry-outs; brick moulds; brick tanks; tube; buckets; and a hundred and one other things on which you can make it pay to let us quote you. Same and Confections; Sools and Vensils; and Confections; Sools and Vensils.

THE MAAG CO.

509-511 W. LOMBARD ST., BALTIMORE, MD.



CIRCLES FROM EAST TO WEST SQUARES

PARA-PARCH

THE PREMIER
ICE CREAM PAPER

Order Your Season's Requirements Now

THE HENLE PAPER MANUFACTURING CO.
535-545 East 79th Street. New York City



ICE CREAM



Increased Sales means Increased Gallonage

The Ice Cream manufacturer can only increase his sales by increasing the consumers' demand.

How he can best do this has long been one of his problems. But experience has shown that, beyond question, the best way to reach the consumer is through the Dealer. And please remember-your Dealer is more than just a Dealer. He is your Salesman and as such should be furnished with ideas, suggestions and advertising material which will enable him to successfully sell your product. He can only increase his sales by your cooperation in sales effort and good advertising. We can furnish you distinctive Advertising material for Dealer display and direct appeal to the con-We shall be pleased to furnish you a definite plan of Advertising that will bring results. Consider your requirements at once. The Ice



Cream season is here. Write or wire us.

Two Twenty-live Tourth Avenue New York

Advertising Specialists to the Ice Cream Manufacturer





A National Cash Register



NATIONAL CASH REGISTER CO.

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checks amount of ice cream in hardening rooms

WE have been using a National Cash Register for some time to keep records of ice cream made and we are very much pleased with the results obtained.

"From the register totals we have an accurate record of the amount made and placed in the Hardening Rooms. This record is of great importance in ascertaining the stock of each flavor in Hardening Rooms after deliveries have been made and recorded."

Abbotts Alderney Dairies, Inc.

000

Manager

NATIONAL CASH REGISTER CO.

THE Fair Practices Code of The Association of Ice Cream Supply Men is now serving as a model for the drawing up of regulations to govern transactions in several other industries. It is recognized that the Code ranks among the most enlightened expressions of business conscience that organized commercial life knows today.

It is this Code that is operating to protect the dollars of ice cream producers of the continent in their purchasing of manufacturing and marketing materials. It is a foundation stone in their dealings with you of one hundred organized firms.

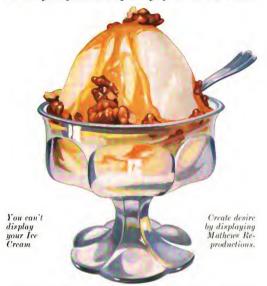


Safety to the Buyer through the Fair Practices Code



The Association of Ice Cream Supply Men
1328 BROADWAY NEW YORK CITY

Your Ice Cream Illustrations Do they Reflect the Quality of Your Product?



WORDS CANNOT DESCRIBE the delicious quality of your ice cream. But Mathews' reproductions will convey your message of quality and will leave a permanent impression in your favor in the mind of every consumer.

Mathews' illustrations and Mathews' service combine to give the Ice Cream Manufacturer true service. They will smooth the path of your management and the results in bigger sales will make your heart glad.



FREDERICK C. MATHEWS COMPANY "SERVANTS TO THE DAIRY INDUSTRY"

P. O. BOX 834 DETROIT, MICH.

This insert was produced complete by the Frederick C. Mathews Company

The Visual Impression

Lasts Longer than the Memory of Quality



LET THIS ILLUSTRATION AND OTHERS LIKE IT REPRESENT YOU IN THE PUBLIC MIND

LONG after the memory of the delicious flavor and smoothness of your ice cream has been lest. Mathews' true to life reproductions are remembered in connection with your name and your message.

From the studio to the press Mathews' creations are produced by artists.

From the editorial to the Shipping Room every department works hand in hand and in censtant communication. That is the reason Ice Cream men are so universally pleased with Mathews' advertising material and service.

It will pay you to wait until you see our representative before placing your order for ice cream or milk publicity. To avoid disappointment drop us a line about your needs. It will not obligate you and may lead to bigger profits for your business.



FREDERICK C. MATHEWS COMPANY

"SERVANTS TO THE DAIRY INDUSTRY"

P. O. BOX 834

DETROIT, MICH.

This insert was produced complete by the Frederick C. Mathews Company

Five Hundred Dollars For Displaying Ice Cream

THE Frederick C. Mathews Company of Detroit, Michigan, are awarding twenty generous prizes, ranging from \$75.00 down to \$5.00 for the best dressed windows and the best trimmed stores for the promotion of the sale of ice cream.

This competition is wide open to every store handling ice

cream in any way in Canada and the United States.

The prizes are as follows: 1st, \$75.00; 2nd, \$50.00; 3rd, \$25.00; 4th, \$15.00; 5th, \$10.00, and fifteen additional prizes of \$5 each.

The Above Prizes Are Duplicated To Ice Cream Salesmen Thus:

The salesman who handles the accounts of the dealers who win more of the total amount of the prize money than those handled by any other salesman, will receive a first prize of \$75.00. The next highest salesman will receive \$50.00 and so on. In the event of ties, prizes identical in character will be given to each of those

The following Ice Cream Manufacturers have consented to form the Committee that will make the awards:

F. F. THOMPSON, City Dairies Co., St. Louis, Mo.

BURT WALKER. Royal Ice Cream Co., Tacoma, Washington.

Hughes Ice Cream Co., Los Angeles, Calif.

J. W. CARLYLE, Crystal Dairy, Ltd., Calgary, Canada. P. P. LECOINTE.

Montreal Dairy, Ltd., Montreal, Canada. IOHN SEMON.

Semon Ice Cream Co., New Haven, Conn. W. J. KENNEDY, Detroit Creamery Co., Detroit, Mich.

It is impossible to give full details of the Contest in this space. Write today for particulars and start at once to interest your dealers. As indicated above, this competition is open to all without any obligations, expressed or implied.

Closing Date of Prize Contest, September 7, 1921.



FREDERICK C. MATHEWS COMPANY

"Servants to the Dairy Industry"

P. O. Box 834

DETROIT, MICHIGAN

The Great "2-A" only costs \$3.50 per gallon in barrels. It gives a delightful flavor to ice cream that is sure to please the most exacting trade.

ORDER YOUR BARREL NOW FROM

Massey & Massey Co.

1214-1216 Webster Ave. Chicago, U. S. A.

THE ICE CREAM TRADE JOURNAL

Vol. XVII

NEW YORK, MAY, 1921

No. 5

CHAMBER OF COMMERCE MEETS AT ATLANTIC CITY

Problems of National and International Scope Were Considered At Ninth Annual Meeting

"In the public interest—more business methods in government; less government management of business," was the main theme of the ninth, annual meeting of the Chamber of Commerce of the United States at Atlantic City, April 20 to 29. A considerable delegation representing the food and associated industries were included in the business men from all parts of the country, who attended the convention.

Twenty-two resolutions taking up both National and International issues were adopted by the assembled members of the Chamber. These resolutions follow in part:

Principles of American Enterprise. This Chamler believes that the relation of government toward industry and commerce is primarily that of preserving equality of opportunity for all,—an equal chance to every citizen to win his position in accordance with his character, ability and efforts. Individual initiative, strengthened by education, safeguarded by publicity, stimulated by active and free competition, is the guarantee of sound national progress. Laws and administrative acts should touch business enterprise with great care and only to preserve a fair field to all.

A wholesome standard of living is essential to general contentment. That standard depends upon the intelligence, work, and thrift of the individual citizen and improves as the total production of the country increases. Hence, restriction of production or obstruction to distribution must necessarily undermine that standard, resulting in injury to all citizens, of every class. We therefore condem avoidable strikes, lockouts, and all combinations that needlessly limit output or curtail distribution, on the park of workers, owners, or managers of industry.

The foundation of all enterprise is primarily that of service to the community, and this service is most effective under private initiative. The community's valuation of that service, and its reward for it, are most fairly expressed when secured by individual initiative, under conditions of free competition. The value of and the reward for such service eauntot be

safely apportioned by the arbitrary decisions of government agencies.

World Readjustment. In his recent address to Congress, the President of the United States declared:

We have witnessed, sea we have participated in, the supremoly tragic episode of war, but our deeper concern is in the continuing life of mations and the development of civilization. Our obligations in effecting European tranquility because of war's involvements are not less impelling than our part in the war itself. This restoration must be wrought before the human procession can go onward again,

The Chamber of Commerce of the United States most earnestly endorses this statement and urges that all Americans unite with the Executive in securing without unnecessary delay a sound solution of the problem involved.

World restoration will be influenced to an important degree by settlement of the relationship of the United States to the nations of Europe. It is equally clear that the return of our domestic prosperity largely depends upon this settlement.

We believe that the clear definition and positive concerning the establishment and maintenance of world peace, and of order and understanding in the commercial intercourse of nations, is of greater importance than any other problem now confronting our country and the world. We, therefore, urge that our national policy in this respect be fixed with all possible speed consistent with just recognition of our obligation, of the necessary safeguards to our institutions and interests, and especially of the rights of American nationals abroad.

Railroad Transportation. Safe and adequate rail transportation, at the lowest rates consistent with fair wages to employees and with just returns to the owners and also sufficient to instre constant growth and improvement in facilities, is essential to the upbuilding of the nation.

Reasonable returns on the fair value of the railway system of the country are necessary, not only as an act of justice to the owners, but also to attract money for expansion, and to promote the safety of railways securities in which, to a large extent, are invested the assets of savings banks and insurance companies, in the stability of which the hard-working and thrifty of our population are so vitally interested.

Manifestly, proper aggregate carnings must be maintained, but rates and the relation of rates between various commodities, particularly the products of agriculture, should be established with great care and, in case of proved inequality, secure prompt correction.

In a country of great distances like the United States it is very important for the farmer, the labor-cr. the miner, the merchant, the manufacturer,—in fact, every producer and every consumer,—to have the widest distribution of commodities, and the railway system is the backbone of production and distribution, with which other forms of transportation should be co-ordinated, to the end that lowest rates, consistent with progressive development of facilities, may be obtained.

The unrivaled railway system of the United States was created through the courage, energy, brains and money of individuals. Managed and operated by its owners, transportation has been furnished to the people of this country of better quality and at lower rates than in any other nation.

The nation, speaking through the last Congress, decided that it wishes its railway system owned and operated by individual citizens subject to regulation by federal and state authority and that it does not want government ownership or operation.

The Chamber of Commerce of the United States reiterates its opposition to government ownership or operation. It believes that regulation is reasonable only when it is not so restrictive as to cripple initiative and when it permits prompt action by those responsible for results. Unduly restrictive laws retard the railways rather than assist them to meet the needs of our increasing population and commerce and, in the long run, work in the direction of increased rather than reduced rates.

Highways. The importance of improved highways has already had recognition by the Chamber, and the highway development in the country has attracted wide attention. In order that funds now to be spent for highway construction may adequately serve the economic purposes which are becoming clearly recognized, the following fundamental principles should govern:

Bonds should be issued by states and territories, counties, or municipalities, and federal assistance furnished, only for portions of highway construction which are reasonably enduring and permanent in character.

Federal appropriations should be made only for assistance to state highways which will become a part of an interstate system.

Federal assistance should be continued only to those states which adequately maintain highways for which there has been federal aid.

Most careful study should be made by the federal government in co-operation with state governments as to routes, the probable character of service over such routes, and the best form of construction to meet such service. These studies should include ultimate ecohomies of location and design.

National Budget. The economies which will result from a budget system on the part of the federal government have been repeatedly urged by the Chamber. The need for economy in governmental operation will never be more imperative. The attention which Congress is now devoting to this reform should immediately result in legislation.

The benefits of budgetary procedure can be attained only if legislation takes an appropriate form and is accompanied with corresponding changes in the methods of Congress in making provision for the raising and the expenditure of public funds. That the budget system may be most effective legislation should place upon the President the responsibility for initiating the program of expenditures and revenues which is placed before Congress.

Government Reorganization. At a time when the expenditures of our government exceed four billion dollars a year, it is self-evident that all possible economy in the operation of the machinery of government is a matter of vital concern to every citizen, and particularly to every taxpayer.

The present system of departments and bureaus, with their network of subsidiary offices and services extending over the entire country, has developed bit by bit through a great number of years. It has long been a matter of general belief among persons who have had occasion to deal with the government that the system as a whole lacks co-ordination and general efficiency, and thereby fails to render the quality of service which Americans have a right to demand of their government, and at the same time involves a great waste of public money.

Successive Administrations have attempted to remedy this situation; so entirely opposed to the genius of our people. But the archaic system still confronts us, its inefficiency brought into sharp relief by the increase in the number and importance of the duties which the government has been called upon to assume during the past few years. This intolerable and un-American situation stands out today as the greatest single obstacle to a mutually satisfactory co-operation and understanding between government and business. With our government operating largely by means of machinery installed in the days of our great-grandfathers, supplemented by a number of assorted functions developed during recent years for a variety of reasons, some sound and some unsound, but involving in all cases almost complete lack of co-ordination with the old machinery, it is not surprising that the modern business man and the government officials, no matter how able the latter may be, find it hard to meet on sympathetic terms.

It is evident that many public officials are underpaid. But it is highly probable that the saving which can be effected through the combination of similar services now separately and wastefully handled, will save money ample to provide not only for needed salary increases, but also for entirely new services which modern conditions urgently demand, and still leave a handsome unexpended balance.

The Chamber most carnestly invites the attention of the government to the great opportunity for service to our people as a whole and particularly to American economic life at a period of critical importance to its stability, which is involved in a thorough departmental reorganization at this time. It calls upon the government to fulfill without delay its pledge in this regard, and to proceed to a reorganization and a co-ordination of services along lines consistent with its declared policy of "More business in government."

Commercial Arbitration. Regarding arbitration as a most desirable and economic method of adjusting commercial disputes, the Chamber reaffirms its advocacy of this method of settling commercial disputes and urges the passage of laws in the various states that will promote commercial arbitration in adjusting questions which arise in the interpretation and fulfillment of contracts.

Government Service to Business: Events during the past eighteen months have made clear to the American business men the vital importance of accurate economic facts. The lack of correct and comprehensive data on the fundamentals of production, of stocks of raw material and fabricated goods, and of the facilities of distribution, contributed substantially toward the painful financial losses of the still continuing period of business depression. These losses have adversely affected not only wide sections of our business community, but also the great body of producers, consumers, and the general public.

A proper function of government is to render service to husiness where such service cannot adequateby be provided by individual initiative. The obtaining of basic nation-wide and world-wide data on commerce and industry is an example of such service.

The data hitherto collected has never been adequate for American needs, nor has it been promptly or effectively presented for actual business use. The duty of gathering such facts now rests with an almost incredible number of widely scattered bureaus. The facts are brought together for a variety of purposes, few of which have any bearing upon the practical requirements of business. Much information, of immeasurable value to American trade and industry, lies almost unused in Washington because it is in such form as to render difficult its practical use, or has not been made use of because business men have not been properly advised as to the kind of service which more than four score bureaus are prepared to render him if he will approach each one in turn and study its stock-in-trade and facilities.

The Department of Commerce is now charged with the primary duty of rendering the fullest possible service to American commerce, both foreign and domestic. It has no inquisitorial or regulatory powers and is accordingly free from the equivocal duty of restraining business with one hand while it attempts to offer service with the other. This Department is in a peculiarly favorable position to obtain, co-ordinate and distribute vital commercial information, carefully safeguarding all confidential facts. It can render invaluable service through the development of commercial standards and specifications, the absence of which is costing the American people at the present time hundreds of millions of dollars needlessly expended.

The Chamber strongly recommends that the facilities of the Department of Commerce be broadened to meet the actual and economically proper demands of the business of this great nation.

The Chamber believes that the prompt consummation of this plan will give a decided impetus to the revival of business both domestic and foreign, at a time when such revival is proving a slow and arduous process; and that the service thus made available to American business will contribute substantially to reducing the suddenness and intensity of future business depressions through establishing a more accurate and reliable basis of available facts bearing upon the entire business situation, both domestic and foreign.

Tariff Policies: Questions relating to the policy of the United States have been before all the group sessions, and a statement from the Chamber's Committee on Tariff Policy has had consideration at the group sessions and from the Resolutions Committee.

Understanding that this statement was the nature of a report of progress and realizing the importance and difficulty of the problems which are being studied by the Committee on Tariff Policy, the annual meting requests that the questions before it on this subject should be investigated by the Committee and awaits with interest the Committee's final report.

Court of Tax Appeals: In the revision of the revenue laws, which the Chamber believes essential, there should be provision for a court or courts of tax appeals, to be appointed by the President and to be entirely separate and independent from the Treasury Department. This court should adjudicate cases in dispute between a taxpayer and the Bureau of Internal Revenue.

Taxation of Capital Assets: Through referendum the Chamber is formally committed to a distinction, for purposes of the federal income tax, between gains realized from the sale of capital assets and income received from business or other current activities, and it advocates a policy of less burdensome rates upon the former when properly defined than upon the latter. Treatment under the present law of gains on capital investments as taxable income in the year when they are realized operates to prevent the consummation of numberless transactions essential to the normal growth and development of the country's business. The government is thus deprived of revenues which would accrue to it if the burden was reasonable and the transactions were consummated with the increase in business volume thus to be expected. For these reasons, if in the maintenance of necessary revenues, such gains be treated as income then we urge more reasonable rates to apply on such capital gains, properly defined.

Taxation: Referendum No. 34 on the report of the special committee on taxation developed in the opinion of some of the constituent members of the Chamber an uncertainty as to the proper interpretation of the votes upon some of the questions propounded. During this convention there have been put forward in formal resolutions by constituent members under the provisions of the by-laws and by group meetings resolution calculated to open up these doubtful questions and secure a definite and conclusive opinion upon them.

The Committee on Resolutions believes it will be unwise to establish in this way a precedent whereby a convention held shortly after the completion of a referendum should by a vote much less in number of constituent organizations represented endeavor to revive by a convention vote, the vote upon a formal referendum. The Committee, therefore, recommends that the annual meeting should request the Board of Directors to take steps to have a new referendum prepared at once, thus again permitting the organization members of the Chamber to record their definite opinion. Thereby a declaration by the Chamber freed from uncertainty and conclusive in its recommendations becomes possible.

ORGANIZATION IN INDUSTRY

In a bulletin issued to members by The Association of Ice Cream Supply Men, April 25, the following comments are made upon the place in present conomic life of trade asosciations in general and of the field awaiting still more aggressive association efforts in the ice cream industry:

We believe members should find special interest in President Harding's statement in his message to Congress the week before last concerning trade associations. It reflects the importance the trade association can assume and is now recognized to hold in the economic life of the country. It also throws into inci-dental relief the distinction between price-fixing or price-discussing associations, the economic justification for which will always be open to dispute, and the type of association to which our own members belong, with its absolute leaving alone of all price comparisons and its concentration on the sort of industrial protection and development that legitimately stimulates, first its own immediate industrial field and then, indirectly, the whole economic field.

President Harding's message attributes the failure of retail prices to represent wholesale price declines in part to the activities of open-price associations, members of which, without technical violation of the anti-trust laws, nevertheless so operate through their association offices as to maintain or change prices of given commodities as a unit. Such open-price asso-ciations represent much narrower economic principles than do associations such as that to which our members belong.

A final report of the War Industries Board, recently made, and based upon closer observation of national industry than has ever before been possible, has this estimate, which should also be of particular interest, of the possibilities of legitimate trade asso-

(they) are capable of carrying out pur-the greatest public benefit. They can inposes of the greatest public benefit. crease the amount of wealth available for the comfort of the people . . . ; they can assist in cultivating the public taste for rational types of commodities; by exchange of trade information extravagant methods of production and distribution

can be avoided through them."

That the ice cream industry as a whole, growing annually in its capital investments, in its complexity and in its important interests as it is, offers a field for broad, aggressive, legitimate association efforts of so much larger measure than those now in force that the latter by comparison may justly seem mere beginnings, we believe is a realization that should be apparent to all our members.

Concerning the position of the ice cream industry with relation to the widespread business depression that has prevailed in the country, this bulletin also

It is to be emphasized once again that the ice cream industry is in an especially favored situation today, lusofar as depression is ever merely psychological, it can be adversely affected, of course. But insofar as depression is the shrinkage of manufacturing properties or values or the cessation of demand and production, it is less affected than the vast majority of industries, and, logically, businesses catering to it are in a situation correspondingly favored,

A RESULT OF COOPERATION

"The 1921 National Dairy Show is for the people, by the people and of the people of the dairy industry," says E. W. Chandler, President of The Creamery Package Mfg. Co. He says further:

Those of us who at times get discouraged by the difficulty of securing the cooperation of various branches of the dairy industry on some worthy project can take heart over the splendid manner in. which all in the industry put the shoulder to the wheel to make the National Dairy Show the wonderful success it has become

The 1921 Show to be held at the Minnesota State Fair Grounds will have the same full measure of harmonious cooperation as have its predecessors. of the space on the ground floor in the Exhibition Building-which by the way is the largest of its kind in the world-was taken in an bour after the sale opened. The space on the mezzanine floor is doubtless all sold at the present time.

Another example of whole-hearted cooperation is the fact that the International Milk Dealers' Assn. and the National Association of Ice Cream Manufacturers, will hold their conventions at the Twin Cities during the week of the Dairy Show, and a record breaking attendance is assured. The secretaries of many of the Butter and Cheese Makers' Associations advise that most of their members will attend. The state leaders promise that the county agents will attend in large numbers and these live wires will be instrumental in getting a large attendance of dairy farmers. The dairy cattle men promise to put on their biggest exhibition at the Dairy This is an event of prime importance to those interested in dairy cattle-and who in our industry is most?

And so the examples of cooperation could be enumerated indefinitely. Doubtless there are other acit is a matter of extreme gratification to those of us who believe in the tremendous value of the National Dairy Show as a publicity and educational force, to realize that the dairy industry is so solidly for it.

A parol promise of a stockholder to pay the debt of the corporation is held to be unenforceable under the Statute of Frauds, in Richardson Press v. Albright, 224 N. Y. 497, 121 N. E. 362, annotated in 8 A. L. R. 1195, on the validity of an oral promise by a stockholder to pay the debt of a corporation.

Twenty-first Annual National Convention

The 21st Annual Convention of the National Association of Ice Cream Munacturers will be held at Minneapolis, Minnesota, Hotel Radisson, on October 10, 11, and 12, 1921, during the week of the National Dairy Show.

Railroad Rates. Up to the present time we have been assured of at least a fare and one-half for the round trip for ice cream manufacturers, their employees and members of their families attending the convention. The Chicago manufacturers have in contemplation the chartering of a special train, which will also take care of the Eastern and Southern manufacturers who might wish to go on it, the fare on this train to be the same as the reduced rate applying on the regular trains. More complete detail regarding this special train and the reduced rates will be announced later, but we may say that special service and attractions will be afforded passengers on the special train.

Hotel Reservations. As the hotels will all be very crowded during the time of our Convention, this Association has made the following reservations for members:

Radisson hotel, 100 rooms reserved ranging in price from \$6 a day up for double rooms. No single rooms available. One person occupying a double room will be expected to pay the capacity price of the room.

Dyckman hotel, (one block from the Radisson) 50 rooms reserved. Single rooms \$2.50 upward; double rooms \$4.50 upward. Cuttis hotel (four blocks from the Radisson) 50 rooms reserved.

Single rooms \$2 and up; double rooms \$3 and up.

Andrews hotel (two blocks from the Radisson) 40 rooms reserved.

Single rooms \$2 and up; double rooms \$3 and up.

In order that you may be properly taken care of it is suggested that you

make your reservations immediately, and it is further suggested that wherever possible two or more people occupy one room.

In making reservations for double rooms state whether double bed or two or more beds are desired, as this will greatly facilitate the handling of

Make your reservations with the hotel direct, asking for an acknowl-

Make your reservations with the hotel direct, asking for an acknowledgment.

Program Suggestions. The Program Committee invites suggestions from ice cream manufacturers as to subjects to be discussed, also speakers. This is your Convention, so please do not overlook our request for suggestions, but let us have these promptly.

Are you in favor of having formal addresses of general interest to the industry, or would you prefer that the program be made up to a greater extent of factory problems, to be discussed by ice cream manufacturers qualified to talk on such subjects?

You will be kept informed from time to time as further details of transportation program, etc., are developed. But do not fail to make your hotel reservations at once, writing direct to the hotel.

F. N. MARTIN, President N. LOEWENSTEIN,

Notice to Supply Houses. In fairness to all concerned, the Association has requested the Radisson Hotel not to permit any exhibit or advertising signs of any kind on the convention floor, the mezzanine floor or the lobby.

A REVISED CALCULATION

In the March, 1921, issue of THE ICE CREAM TRADE JOURNAL was published the article "Proportioning the Ingredients for Ice Cream," by O. E. Williams, Dairy Manufacturing Specialist, United States Department of Agriculture. An error having been found in the "rough estimates" of example 5 of this article, the author found it necessary to make slight changes in the entire problem. The corrected copy follows:

EXAMPLE 5.

Mix. Give the proportions for 220 gallons of a frozen product testing approximately 10 per cent, fat, 14 per cent, sugar, 10 per cent, milk solids not fat, and .05 per cent. gelatin. The weight of the product desired is 4.5 pounds per gallon.

Stock on hand. Sugar, gelatine, cream (33 per cent.), condensed milk testing 10 per cent. fat, 22 per cent. m. s. n. f., and whole milk testing 3.6 per cent. fat.

Illustration of Example 5.

Total Pounds 990	Ingredients and Composition	Fat 10% 99 lbs,	Sugar 14.0% 138.5 lbs.	M.S.N.F. 10% 99 lbs.	Gelatir 0.5% 4.95 lbs
lbs.		lbs.	1bs.	lbs.	Вик.
118.5	Sugar		138.5		
49.5	Gelatin, 10%				4.93
185.0	Cream, 33%	61.0	٦		
372.5	Whole milk,			44.9	
	3.6%	13.4			
245.0	Condensed				
	milk,	24.5		53.9	
	10% fat.				
	22% s.n.f.				
990.5		98.9	138.5	98.8	4.95

The calculations necessary in determining the proportions are as follows (consider the ingredients as they are listed):

Sugar. The amount of sugar is the same as the amount calculated for the mix, since there is no cane sugar in the other ingredients.

Gelatin. The amount of gelatin solution is determined by moving the decimal point one place to the left, since the solution is a 10 per cent. mixture.

Cream (33 per cent.). The amount of cream can not be proportioned until after the condensed milk is proportioned, since it contains 10 per cent. fat.

Whole milk (3.6 per cent,). Temporarily omitted for the same reason,

Condensed Milk. The amount of condensed milk necessary in this case is determined by using a rough estimate. From this estimate it is found that 245 pounds is about the correct amount, thus;

990—(138.54.49.5 + 245)=557 557—(99-24.5)=482.5 482.5 × 0.093-44.87 pounds of milk solids not fat.

Cream (33 per cent.) and Whole Milk (3.6 per cent.). From these two ingredients must come the halance of the constituents (fat and solids not fat) of the mix. To find the amount of each, subtract the amount of fat added by the condensed milk from the total amount required and divide by 557, the difference between the amount of ingredients already used, and the total (990) pounds required, thus:

99-24.5-74.5 74.5+557 x 100-13.37 per cent. fat in 557 pounds of milk. This gives the per cent, of fat that the additional 557 pounds of mix must contain. To find the proportions of cream and whole milk that are necessary the "square method" is used. The calculations for the "square method" are as follows:



557 ÷ 29.4=18.94 18.94 × 9.77=185.0 pounds of cream 18.94 × 19.63=372.5 pounds of whole milk.

The accuracy of the calculations can be ascertained by comparing the sum of the figures in each column with the stipulated amounts placed at the top of each column.

When this has been done the ingredients are proportioned by careful weighing. The mix is then ready to be pasteurized and homogenized.

ROUGH ESTIMATES.

Whenever a mix is made from an unlimited quantity of condensed whole milk the amount of condensed milk required is determined by first making a rough estimate. For instance, in example 5, we do not know what part of the total amount of milk solids not fat of the mix must come from the condensed milk, so we try what we think is about the right amount. In this case the figure taken to begin with was 220 pounds. This figure is taken because from experience we know that about 50 per cent. of the m. s. n. f. in the mix must come from the condensed milk. That quantity divided by 22 (the percentage of m. s. n. f. in the condensed milk) shows that it will require about 220 pounds of the condensed milk. This amount would add 22.0 pounds of fat and 48.4 pounds of m. s. n. f. to the mix.

To tell whether or not this is right simply take the difference between the total amount of ingredients already calculated (that is, the pounds of sugar, gelatine and condensed milk) and the total weight of the mix and subtract the difference between the fat used in the condensed milk and the total amount required to find the amount of milk serum. Then multiply this figure by .093 to get approximately the amount of milk solids not fat that will come from the milk and cream and the sum of the two will indicate whether the proportions are correct, thus:

990—(138.5 + 49.5 + 220)=582 pounds of milk and cream, 582—(99—22)=505 pounds of milk serum, 585 × 0.093=47.25 pounds of m. s. n. f. from serum, 47.25+48.4=95.65 pounds of m. s. n. f. in mix.

The total amount of m. s. n. f. lacks about 3.35 pounds, so we increase the amount of condensed milk 25 pounds or to 245 pounds, which gives practically the right amount as shown in the table.

In case the quantity had been increased only 15 pounds the total amount of m. s. n. f. would have been a trifle short of the amount desired. The amount of milk and cream is then calculated as heretofore explained.

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WHO'S GOT SAND?

Crystallization of Lactose After Freezing Believed To Be Cause of This Defect

By F. H. Bothell

Of the Crescent Creamery Co., Los Angeles, Calif. From an address delivered at the annual convention of the Pacific Ice Cream Manufacturers Association

Sand is a valuable asset in its place, but when it gets into a bearing or ice cream, the devil is to pay, I know-for I have been through the time when I saw sandy ice cream in my dreams and saw the real article when awake, and I can testify that sandy ice cream is no joke except when your competitor has it and you think you have not. It is a grade of cream we dislike to admit we have made, but few manufacturers can truthfully say they have not if they have been using condensed or powdered milk to increase the solids in their mix. I believe the statement is correct that no sandy ice cream has ever occurred except when these have been used. In the days when our mix consisted only of cream, sugar and gelatine, we experienced no trouble with sand, but when we increased the solids in our cream by the addition of condensed milk it made its appearance. The fact that we did not have sand when we used one formula and did when we used the other, shows that we have crossed the wires some-

From our study of chemistry we know that the solubility and crystallization of different substances are governed by natural laws. When these laws are known and followed, certain definite results are obtained. The sugar manufacturer uses his knowledge of the laws of crystallization in the manufacture of sugar. When the juice of the beet or cane are first pressed from the plant the sugar is in perfect solution, but when this juice has been concentrated to a certain point a portion of the milk crystallizes out. The same is true of lactose (or milk sugar). In fresh milk the sugar is in perfect solution, but when we concentrate it in our condenser we bring about the same condition which the sugar manufacturer employs to manufacture his product. When drawn from the condenser it is free from crystals, but in the case of sweetened milk, if concentrated sufficiently to preserve it, the crystals will soon appear. These crystals in the condensed milk are frequently considered responsible for the sand in the frozen cream. Some manufacturers have stopped the trouble by reducing the concentration of the condensed. The question is, did their mix made with the lower condensed contain the same percentage of solids as did the mix made with the heavier condensed? One manufacturer I know stopped the sandy trouble by using 3-1 condensed in place of 4-1, but at the same time he lowered the total solids of his mix as he used the same gallonage of the light condensed as he formerly used of the heavy. While he stopped the sandy cream, at the same time he increased the cost of manufacture to the amount of extra express charges on the additional water transported from the condensory to the plant.

Sweetened skim condensed has a total solids content of approximately 67 per cent, of which 40 per cent, is sugar and 27 per cent, milk solids. One hundred pounds of such condensed would contain 40 pounds of sugar and 60 pounds of condensed milk, of which 27 pounds would be milk solids. Twentyseven pounds of milk solids is equivalent to the solids of 300 pounds of skim milk, which means that in the manufacture of this hundred pounds of sweetened condensed 300 pounds of skim milk was reduced to 60 pounds, a reduction of 5-1. Thousands of gallons of this sweetened product are used yearly in the manufacture of ice cream with good results.

I do not believe the crystals formed in the condensed milk before it is added to the mix necessarily has any bearing on the quality of the frozen product, as the crystalization of lactose does not change its solubility and if it is redissolved before freezing it is immaterial in what form the condensed has been obtained. It is the amount of factose in the final mix which needs our attention.

None of us would care to go back to the use of our old formulas used before the introduction of condensed milk, but these formulas should be of help to us in finding a solution to this problem.

A mix made from cream, sugar and gelatine contains the same ingredients as does a mix made with condensed milk, but in different proportions. Take for example the following formulas:

Formula without condensed milk:

51.5 lbs. 30% cream 34.0 Skim milk 14.0 Sugar .5 Gelatine

100.0 lbs. Total Solids: 15.5% fat; 6% milk solids not fat; 14% sugar; .5% gelatine and 36% total solids.

Formula using condensed milk:

35.0 lbs. 30% cream 28.5 Skim milk 22.0 Unswectened condensed (3-1) 28.5 22.0 14.0

Sugar Gelatine

t00.00 lbs. Total

Solids: 10.5% fat; 11% milk solids not fat; t4% sugar; .5% gelatine and 36% total solids.

The total solids, sugar and gelatine are the same in both formulas, but the milk solids are entirely different, the milk solids not fat being 6 per cent. in one and 11 per cent, in the other, 100 lbs, mixes made according to these formulas would contain 64 pounds of water and 31/2 lbs. lactose in one, and 7 lbs, in the other, the latter being calculated on the basis of normal milk containing 5 per cent. lactose. This water and lactose would make solutions containing 5 per cent. and 9.8 per cent. lactose respectively

Our first experience with sandy cream occurred

in June, 1919. At the time we were using both sweetened and unsweetened condensed, the former being very sandy. This condensed was added to the cream at the mixing vat and it was to the sweetened condensed we attributed our trouble. We tried heating the condensed to dissolve the crystals and later pasteurized and homogenized the entire mix. For two months we did not have a can of sandy cream and we thought we had solved the trouble, but with the coming of cool weather which resulted in the cream being held longer in the cabinets, we again had sporadic cases. Still thinking that the sand was coming from the undissolved crystals in the condensed, we raised the pasteurizing temperature to 180 deg. F. At about this time the sugar shortage came on and we were compelled to reduce the amount of sugar we were using. To maintain the quality of our cream, we added additional milk solids in the form of condensed milk to replace the sugar we were compelled to leave out. It was then our trouble began in carnest. We were using a 38 per cent. mix at the time which we dropped to 32 per cent. This stopped the sandy ice cream immediately, showing that the crystals in the condensed were not responsible for those in the cream as we still continued to use the same condensed milk, but that they were forming after the cream was frozen.

To further prove this, we pasteurized and then retroze some very sandy ice cream which had been returned from the trade. No crystals could be detected in the freshly frozen product. Two cans were packed immediately in salt and ice under cabinet conditions, the remainder being held in the hardening room at zero and below. Four days later two cans of that in the hardening room was taken out and placed in ice and salt. This cream was examined daily for sand, but not until the tenth day did it start to appear in the two cans first put under cabinet conditions, and thirteen days in the two which were first hardened in the hardening room. That kept in the hardening room was still free from sand. This satisfactorily proved to us that the crystals form after freezing.

That there is a gradual precipitation of lactose in a water solution when it is supersaturated, is shown by experiments conducted by C. S. Hudson of Massachusetts Institute of Technology, the results of which are published in two papers by him in the Journal of American Chemical Society of the years 1904 and 1908. This following table has been changed somewhat to make it read in percentages:

SOLUTION	OF	Мил	SUGAR	HELD	AT	32	DEG.	F.:
Hours					Co	nce	ntrati	on
0						20	16%	
1.2						17.	78	
24						16.		
36						14.		
48						t3.		

The solution he used was made with warm water and an excess of milk sugar. The solution was cooled to 32 deg, and held at this temperature during the experiment. When the experiment first started the solution contained 20.16 per cent, sugar, but after 48 hours it had crystallized out to 13.92 per

cent, and the final solution at the end of the experiment contained but 10.85 per cent, stagar. That this gradual crystallization takes place in ice cream is borne out by our experiment with refrozen ice cream and also explains why we did not have more trouble in the summer, as the ice cream was consumed before the crystals became apparent. It shows an excess of lactose may be in the ice cream, but if consumed in a few days no trouble may be experienced although some crystals are undoubtedly present and others are forming, but as time lapses the daily accumulation of crystals make the cream unpalatable.

The solubility of lactose is frequently given as 20 per cent, which is probably its solubility at approximately 60 deg. F. That its solubility decreases as the temperature is lowered, is shown by another table given by Mr. Hudson, which is as follows:

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Final Successity of Mirk Stoke:

Temperature 0 C, cor 32 F, ser % of sugar 10 o
15 C, or 59 F, ser % of sugar 10 o
15 C, or 75 F, ser % of sugar 10 o
15 C, or 10 E, ser % of sugar 10 o
10 C, or 10 E, ser % of sugar 10 o
10 C, or 10 E, ser % of sugar 10 o
10 C, or 10 E, ser % of sugar 10 o
10 C, or 10 E, ser % of sugar 10 o
10 C, or 10 E, ser % of sugar 10 o
10 S, ser % of sugar 1
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At 192 deg. F., the solution contained 58.2 per cent., but at 32 deg. F., it had crystallized out until it contained but 10.6 per cent. This table does not go low enough, as it does not give us the percentage of lactose at zero temperatures.

To determine the effect of lower temperatures, we experimented in our laboratory, freezing in test tubes solutions of water containing known percentages of lactose. Distilled water and commercial milk sugar such as sold for infant feeding was used in the preparation of these solutions. In these experiments seven solutions were used, the lowest being 10 per cent, and the highest 25 per cent, the intermediate solutions being 21/2 per cent. apart. A 25 per cent, stock solution was thus made by dissolving the sugar at 170 deg. F., after which it was filtered and cooled. From this stock solution the others were made by dilution. Nine tubes of each solution were made, six of which were made acid by the addition of lactic acid, two were alkaline and one neutral. The acid group started at .25 per cent. acidity, which was increased .05 per cent at a step up to .5 per cent. The two in the alkaline group were .05 and .1 per cent. alkaline. All solutions were held at 36 deg. F. for 12 hours. None of the acid group precipitated, but those in the alkaline group did with the exception of the 10 per cent. solution. The solutions were then frozen and held in the hardening room for 12 hours, then allowed to melt at room temperatures. As lactose dissolves very slowly in cold water, we were able to determine qualitatively quite satisfactorily the effect of freezing. In the solutions above 15 per cent, the precipitation was very pronounced. The 121/2 and 15 per cent. solutions in some of the tubes were free from crystals, while others had a trace. The 10 per cent. solution was free from crystals, which was true with this solution throughout the entire experiment. The solutions were re-frozen several times with varying results. Some tubes which did not precipitate with the first freezing did on being refrozen. Refreezing without heating to redissolve the crystals already formed apparently increased the crystallization. The crystals in the alkaline solution were much more pronounced than in the acid group, but there was no apparent difference in the latter group due to the degree of acidity.

When we were through with these experiments, we added ordinary sugar to the same solutions and again refroze, supposing of course it would increase the precipitation, but it had the opposite effect. The higher the percentage of sugar added, the less the precipitation of lactose. Why this is true. I am unable to state, but our test clearly showed that sugar helped to hold the lactose in solutions.

While our technique was probably crude as compared with that of a skilled chemist, nevertheless, we feel that we obtained some results which are an aid to us in keeping off the sandy shoals. As the 10 per cent. solution was the only one that in all cases did not crystallize, we have set that as our limit of lactose to use. This is not 10 per cent. of the mix, but 10 per cent. of the solution of the lactose and water of the mix. For example, 100 pounds of a mix containing 36 per cent. solids should not contain over 6½ pounds of lactose. This may be lower than is necessary and is lower.

than is sometimes used, but a mix under this limit can be economically made and also produces a good quality of ice cream.

It is hardly possible to definitely know the exact amount of lactose in a mix due to the variation in the concentration of the condensed milk, and for this reason it is best to keep somewhat below the limit. This is especially true when using the sweetened product, as there is usually a crystallization of the lactose which is always heavier in the bottom of the barrel, due to settling. If care is not taken in dumping this from the barrels, a very uneven condensed can be obtained. We empty our barrels into 10-gallon cans, being careful to distribute the contents of each barrel as evenly as possible among five cans. There is always a possibility that a careless employee may put all the sand in the bottom of a barrel into one can, and if two such cans got into the same mix there undoubtedly would be trouble. We have been working under this standard for the past ten months with excellent results, having had but one three-gallon can of sandy cream during this time

At the present time we are using a formula which contains close to 10 per cent. lactose. We realize that we are liable to have trouble but we feel that we can control it by dropping the amount of condensed milk used should the necessity arise.

HOMOGENIZING THE ENTIRE MIX

Question of Best Homogenizing Temperature and Other Factors Discussed

By James B. Morse
Of the Cherry-Basset Co., Philadelphia, Pa.
From an address delivered at annual convention of
The Ice Cream Manufacturers Asa'n of West Virginia

Relative to this subject, first I want to make my position clear that I have been associated with both the homogenizer and viscolizer interests, and have had an opportunity to do considerable pioneer work along this line with both machines, but more recently the viscolizer, on all kinds of milk products, such as coffee cream, very heavy viscosity sour cream for Jewish trade, reconstructed milk, and one of the most important products; ice cream mixes.

The question naturally arises—what do we mean by best results? Now from a hacteriological point of view, and that is very important and will be more so as time goes on, the best results are obtained by homogenizing at high temperatures, pericably 140 to 155 deg. F., and then chilling at once to a very low temperature. Personally 1 prefer a water section cooler only between the homogenizer and the container in which the final cooling is to take place, for at least two reasons. First, there is no plausible reason for having a brine section of cooler when you should have ample thrine capacity in your storage vats for quick cooling to low temperatures. Therefore, by having both brine cooler and brine tank

connected up on the same continuous flow of product, you are merely duplicating installations, naturally increasing operating and overlead expense. The nolly reason for using a water cooler at all is that water is the cheapest cooling medium we have, and we want to absorb all the heat units we can in this way. Most of you like the surface cooler for cooling entirely for the aerating effect, but if you leave the covers open on mixing vats while you are heating and agitating, you will find that you will remove any reasonable amount of foreign gases and flavors, while it is true you lose some volume by evaporation, but it is worth the loss.

There is also another very important factor to contend with in the average ice cream plant, for when you cool a complete homogenized mix on a surface cooler down to holding temperatures, your mix, on becoming cool, gets quite viscous, and if all of your storage vats are not near to your cooler, you really have to go to another needless expense, using larger size sanitary pipe and fittings to convey your mix to the holding tank, even with a good gravity flow.

A few years ago, nearly all the fee cream manufacturers wanted all the viscosity they could get, regardless of the solids and fat content of their individual mix, and when a homogenizer was put into operation, quite naturally by breaking up the fat globales, albumine, etc., under pressure the viscosity was greatly increased, more in some cases than in others.

We have found at this time from experience that by homogenizing at a temperature from 190 to 110 deg. F. we get a greater viscosity than homogenizing at a temperature from 140 to 155 deg. F. Also pressures on machines govern this to some extent, but it is a safe conclusion that pressure on machiner from two to three thousand pounds gives you all the viscosity you desire, and above all breaks up nearly all constituents of the milk products, making them a hemogeneous mass so as to climinate any danger of the finished goods separating out through holding after freezing and turning out rough and grainy.

Another factor which increases viscosity is the age and acidity of the milk products used in the mix. All of you who have used sweet butter in the mix as a pinch-hitter or otherwise, having noticed a greatly increased viscosity, even running at the same temperatures, pressures, fat and solid content normal. This is caused by a chemical change in your fats and acidity, as for example, the best product that is made for commercial sour cream trade, as before mentioned, has a very dense body or viscosity by passing it through the machines at low temperatures, yet does not have only nearly normal solids not fat content, and fats are low so far as our standard for market cream is concerned. This product is usually made with butter mix to get this abnormal viscosity.

When making a mix that is generally made to take care of a large overrun on the finished goods, you should try to keep away from a very heavy viscous mix. If you get these results you will find that you have incorporated air through the process, therefore increasing your product in volume from the mixer to the storage tanks, and then when you get the proper swell from your freezers against the volume in your storage tanks, you are all at sea when you check lack to the amount used in the mixing vat before homogenizing, and the finished product has wifered due to a lack of fats and solids.

When I first recommended homogenizing at high temperatures, I was ridiculed by some, but it is being done generally today to overcome a heavy pasty mix which has no redeeming features.

Another point in homogenizing the whole mix is that it is bound to give you a more uniform product. Homogenize your complete mix including your condensed milk, in fact everything except the fruits and flavors, as it helps to make a smooth uniform body. Some manufacturers are now homogenizing their chocolate mix, and where you are equipped to do this, if you ever try it, you will keep it up as it improves it without question.

There is more or less diversified opinion among you on how to handle your mix in relation to the homogenizing, but if it is good for the fats it is

good for the whole mix, including gelatine. Unless you are going to age for a long time, then I know some of you raise a serious objection in reference to bacterial development, yet I do not think you need to worry if your mix is cooled immediately and held at low temperatures.

I trust that I have made myself clear on this subject, although sometimes when these matters come up in friendly discussion, it makes me feel like a traffic cop in a skeep; town who held his job down during the forenoon, but when noon hour arrived and things commenced to get busy and the school children were coming out, he hung this sign on the scmaphore— "Use your own judgment"—and beat it for a drink.

PRICE BILL REINTRODUCED

Representative Clyde Kelly, of Pennsylvania, has reintroduced in the House his standard price bill, under which independent manufacturers would be allowed to fix the prices at which their products would be sold in all markets. Hearings have been held on this bill by the Interstate and Foreign Commerce Committee of the House, and Mr. Kelly will attempt to push it through to final enactment in the present Congress.

The bill has been endorsed by the American Fair Trade League, practically every state retail merchants' association, the National Association of Manufacturers and practically all of the state manufacturers' and wholesafers' associations, said Mr. Kelly. The bill is intended, according to its caption, to "protect the public against false pretenses in merchandising under trade-mark or special brand of articles of standard quality."

The purpose of the bill, according to Mr. Kelly, is "to give the independent manufacturer with an identified product the right to file his trade mark or brand with the Federal Trade Commission as well as his price for sale to the wholesaler and retailer. On such filing, he would have the right to maintain the price of his article. If any person feels aggreed, that the price is too high for instance," said Mr. Kelly, "he may appeal to the Federal Trade Commission. The Federal Trade Commission may revoke the right to fix the prices, but may not fix the price stell."

This would guarantee fair and reasonable prices all down the line, Mr. Kelly feels, which will protect the consumer. Protection against profiteering will come through the fact that when the price is fixed the articles may never be sold at more than the standard price.

A way is provided for disposing of goods by the dealer who may be going out of business, and who may wish to conduct a sale at low prices. He may first offer them back to the maker at the prices he paid for them. If the maker wishes, he may buy them back. If he declines they may then be sold at any prices.

The hill, of course, would apply only to goods in interstate commerce. A similar law is in effect in Oregon, and most of the European countries have such legislation and it has worked most satisfactorily, according to Mr. Kelly.

OVERHEAD EXPENSES

How To Distribute Them in Good and Bad Times

By E. W. McCullough Of the Chamber of Commerce of the United States

consists of

- a. A place to work
- b. Machines to work with
- c. Men to do the work d. Material to work upon

e. And management to coordinate the whole, Let us see what all this means. A place to work requires maintenance. It must be repaired and cleaned, heated and lighted and watched. A place to work bears taxes, rent and insurance and it also depreciates. Machines consume power and supplies. require insurance, attendance, repairs and cleaning, and also depreciate. Men to do the work entail wages, liability insurance and supervision,

Materials include provision for receiving, sorting, handling and shipping. Delivery of material alone may demand a heavy investment in trucks and garage teams, wagons, and stable, forming, in fact, a compact separate miniature organization.

Management takes care of the buying, selling, financing and administration, purchasing agents, salesmen, accountants, stenographers, stationery, postage, telephones, legal expenses, engineering, advertising, traveling, and so right down the line of what are known as general or commercial overhead expenses.

Such is your manufacturing enterprise in crude outline. Elaborate it, departmentalize, unify and combine it, as suits your own requirements.

That which gives life and vitality to your manufacturing enterprise is work-something to do. It stirs the slumbering organism into action, starts the wheels agrinding, the chimneys to smoking. How much work you can turn out-what are the latent possibilities of your organization-that is not often shown or demonstrated. Ordinarily your plant is idle sixteen hours out of twenty-four, and a day and one-half out of seven. Only in a great national crisis or emergency such as the recent war do we really speed up production and extract from our facilities the last onnce of usefulness. Otherwise we strike a steady normal gait of healthy activity below the limit of what we can do, above the limit of slacking or lagging. This norm, this mean or middle ground of possible capacity, is an ever-present fact in industry. It is there and should be recognized as a starting point in the discussion and treatment of industrial problems such as costs. Normal capacity is your 100 degree mark, above which your organization registers in times of excessive or unusual activity, below which it drops in times of curtailed production and demand.

The even flow of work is subject to many interruptions. There are strikes and transportation tieups, machinery breakdowns, seasonal fluctuations, as in the ice cream business, and years of light demand,

A manufacturing enterprise in its simplest terms such as we are at present experiencing. What hap-, pens when there is no work or little work? Do the expenses incident to running a business cease or recede accordingly? Your building still carries its taxes, rent and insurance, and needs about the same degree of repairing, heat, light and watching, and meanwhile it depreciates. Likewise your equipment continues to depreciate and requires insurance and some maintenance. Theoretically you can discharge your men, but practically you find odds and ends of work, nonproductive tasks, for the best of them, and of course you retain your superintendents and many of the foremen. You stop feeding the machines materials, but your money is still tied up, and the material deteriorates, and must be insured, properly stored and cared for. When it comes to the management, you cannot sacrifice your executives, your office, your best salesmen, your best engineers, accountants or clerks. Such are the considerable expenses incident to not doing business; expenses which go on for a considerable time whether or not you are doing a dollar's worth of business or work, expenses that must go on if the organization is to remain intact.

Since such interruptions of industry are still an ordinary incident of business, and carry a cost that must be reckoned, the business man hopes the consumer will pay for them. "I am offering a service to the community," he says. "If for considerable portions of time my facilities are unutilized, my plant and equipment idle, or marking time, I must include in my price an allowance for this item of suspended operation (inoperative contingencies the paper industry calls it): otherwise I cannot exist." Where facilities are based and attuned to the needs of the market, and are not a war-time mushroom growth, the demand of the business man does not appear unreasonable. The trouble very often is that his cost system does not show him how he can recoup such losses.

When the very considerable expenses of not doing business are applied in full to a reduced activity, very high costs result-costs out of all relation to the true costs of production, and costs bearing no relation to what the market will bring. In such time two opposite tendencies develop. On the one hand the business man who is a firm believer in his cost system refuses to take business except on a basis of his inflated costs and thereby further restricts business at a time when the crying need is for more and not less business. The more skeptical business man feels there is something wrong with his cost system, proceeds to ignore it and sells his product for whatever he can get. This treatment of the cost system is more largely responsible for demoralized markets and prices than is realized. Meanwhile the plant is bearing the full brunt of slackened activity. Our cost systems are far too rigid. Under cost methods still largely in use, overhead expenses are spread too thin in times of forced production and massed too heavily in periods of slight demand production, giving in the former case costs that are artificially low and unfair to the management, and in the latter case costs that are artificially high and unfair to the public, and moreover costs which the market will not sustain.

For the sake of convenience, we split up our business into years and treat each year as though it were separate, distinct and unrelated, whereas no such sharp cleavage exists. Year merges and glides into year, one dependent upon and connected with the other. The injustice and inaccuracy of a complete and abrupt cut-off is clearly illustrated by an income tax law which heavily taxes the profit of one year, and makes no compensating allowances for the losses of the following or preceding year's

Cost systems should recognize this continuity of time wherein any single year or month may or may not typify and represent normal production and demand. There are expenses, it has been shown, which continue whether the plant is idle or in operation, expenses that moreover, bear no direct relation to output. Cost systems should provide that these expenses, usually designated as overhead expenses, should be absorbed and pro-rated on the basis of a normal year-that 100 deg, mark on the business thermometer. Thus, in time of unusual production-production exceeding normal-the overhead should be more than used up in costs, and a surplus out of overhead cost created to take care of those years when the output is below normal and the overhead charges not fully absorbed in the costs

To take a very simple illustration: Let us assume the normal output of a department is 100 pieces and the overhead \$100, or an overhead charge of \$1 per item. If the department produces 150 pieces at a normal overhead charge of \$1 per item, not only will the \$100 overhead be used up but there will be an additional \$50 as a reserve accruing to the management. When the output of the department drops to 50 pieces, only \$50 overhead will be applied to this reduced production, and the difference made up from the reserve established during unusual production. This method of cost procedure has numerous advantages, two of which it is here appropriate to mention:

- 1. It will assure the husiness man a reward for his efforts in speeding up.
- It will eliminate the needless throttling of business by the impractical attempt to load semi-normal production with greater charges than can or should be borne.

The determining of a normal year is not an easy matter. It requires a long look behind and a far look ahead. It is by no means sufficient to accept the operations of the preceding year as the sole standard. The normal year is different for a new organization or industry from what it is for one fong established. The normal year does not remain on a dead level but should probably curve upward gradually and conservatively with the growth of population and markets. To do otherwise would indicate industrial stagnation.

To establish normal unit overhead charges, two things must be determined:

1. Normal overhead expenses for the various departments of the business.

2. Normal production.

When the normal overhead expenses are divided by the normal production, the result is the normal unit overhead charge.

in determining normal overhead expenses, those expenses of the previous years which are accidental should be eliminated. An effort must also be made reasonably to anticipate and allow for the trend of expenses for the coming year,

But there is nothing conclusive, final or binding alout this estimate of normal expenses. Each month your cost system gives the estimated overhead expenses and the actual expenses. If there is an increase of the actual over the estimated, and upon analysis that increase is found to be a real increase, due to unanticipated increase of salaries or insurance rates, e.c., and not an inflation arising from reduced production, an adjustment upward can immediately be made in the unit overhead charges. Each concern will establish for itself a safety zone, below or above which decreases or increases in real costs will be reflected and taken up in the selfium price.

In determining normal production due allowance must be made for interruptions of operation. Even in the job industries, which by necessity have been schooled to base overhead charges on a normal year. the tendency is still to base capacity on regularly operated machines. When these machines do not regularly operate, it is apt to go hard with the establishment. In a paper mill with a possible yearly operating time of 7,488 hours, the plant was idle 689 hours or not quite 10 per cent. of the time, because of the usual and customary interrruptions from changing wires and felts, starting and stopping, repairs and high water. How transportation tie-ups, strikes, and slackened demand in many industries affect production is, of course, familiar to all. In determining normal production, then do not delude yourself by placing it too high,-at a mark reached only in exceptionally fortunate years.

Though cost accountants and industrial engineers are prone to using strange and technical terms for it, the accounting device used to secure operation on a basis of a normal year is the now familiar one of the reserve; or a modification thereof.

For purposes of illustration, let us recall how a simple reserve, such as the reserve for had debts, operates. The operating account "had debts" is debited each month with the estimated amount of bad debts likely to be sustained, and the account "reserve for bad debts" credited each month with a like amount. As had debts are actually sustained, the amount thereof is debited to the Reserve for Bad Debts. It is very easy to ascertain for income tax purposes the amount of had debts actually sustained during the year by referring to the debt side of the

Reserve for Bad Debts, and ascertaining the estimated allowance for bad debts by referring to the credit side of the Reserve for Bad Debts.

So the estimated normal overhead expenses will be charged into costs upon the particular cost method employed (man-hours, machine-hours, productive labor, etc.), and likewise credited to the Reserve for Overhead. The actual overhead expense will be delited to the particular expense accounts, and close out periodically to the Reserve for Overhead. Accordingly, the debit side of the Reserve for Overhead and ligits the actual expense totals, and the credit side the estimated expenses. It is assumed such a reserve for overhead will be subdivided in accordance with departmental requirements, and where convenient the expenses will be subdivided in

The preceding has, moreover, left out of consideration refinements recommended by cost accountants of the principle of the Overhead Reserve, such as Underand Over-Earned Overhead or Burden, Overhead or Burden Variance, Supplemental Rates, etc. These do not disturb the essential principles set forth and are apt to confuse a simple presentation of them.

Certain misunderstandings arise concerning the distribution of overhead expenses on the basis of normal year which should be mentioned and disposed of.

 The setting up of estimated overhead charges based on a normal year does not mean the abandonment or compromising of actual overhead costs.

The actual expense exists alongside of the estimated and one is compared with the other and the differences analyzed and accounted for. To an execu-

- tive such an analysis reveals the story
- b. Of advances or decreases in costs not anticipated;
- c. Of costs artificially low or high because of subor abnormal production
- A cost system is built for service, not admiration, and must furnish information that will guide and temper the entire policies of an enterprise. At a time when more and not less business is needed, a cost system that literally interpreted instructs an executive to refuse business except on prohibitively high and inflated costs of production, falls down when most needed. Such a system, though arithmetically correct, presents results that are misleading and which may work serious injury. Accordingly, the actual overhead charges are checked, corrected, supplemented and eased by the estimate of expenses based on the normal year.
- It is not the intention to forego or wipe out a single dollar of overhead expense that can be legitimately and fairly charged to operation, sales or administration.

That the management should hear the expense of subnormal production is a point that has been stressed altogether too exclusively. Meanwhile not sufficient emphasis is given to the converse; namely, that the management should be rewarded for abnormal production. One is as fair as the other.

The balance in the Reserve for Bad Debts is not customarily closed out to Profit and Loss at the end of the year, but carried forward into the next year's operations, since any one year may or may not be typical of the bad debts normally sustained. So likewise the production of any one year may or may not be normal, and the balance of the Reserve for Cverhead, be it debit or credit, should accordingly be carried forward. If the estimate of normal capacity is reasonably low and cautious, such overhead expenses as have not been absorbed in one year will be absorbed and the losses recouped in the years of exceptional production, for in the long run the depth of the depressions will very nearly equal the height of the reals.

What has been stated is elementary and suggestive. Its aim is to stimulate interest and encourage such changes as are necessary to meet progressive competition. The subject has been brewing for some time. It is referred to in the pamphlet of the Federal Trade Commission, "Fundamentals of a Cost System for Manufacturers," published in 1916, and to its development numerous well-known cost accountants and engineers have contributed. Upon inquiry of the Fabriciated Production Department of the Chamber of Commerce of the United States, establishments in such widely separated industries as paper, cut-lery, envelopes, stove, and metal products are operating on the basis of a normal year and upon this basis distribution overhead.

It will be useful to quote from the practice of one producer.

Our whole cost scheme consists in the first place, of a budget, made up the first of each year, for every department, machine and production center. This budget must naturally be based upon past experience plus an intelligent estimate of the possibilities The hours of operation, or the profor the year. duction units are arrived at by taking an assumed 80 per cent. of possible operating time as a basis. all these industries the standard week consists of forty-eight hours, or an eight hour day. ing Sundays and holidays we assume that the year consists of three hundred working days of eight hours each, or 2,400 hours. We take 80 per cent, of this, or 1,920 hours, as our normal unit. This figure used in connection with our budget of expense and operation gives us our normal rate.

We use this normal rate at all times in figuring both estimates and costs. Last year most manufacturers operated more than this normal, with a result that their actual costs were less than the normal cost, and this grain was taken as a sundry profit

At the present time the costs are running considerably higher than the normal, and for some time at least we must absorb this loss, maintaining at the same time a standard normal rate, but not subject to the violent fluctuations brought about by any increases or decreases in the volume of business handled.

But the number and percentage of establishments so operating is indeed inconsiderable and to many the mere idea of distributing overhead on a basis of a normal year is novel and daring.

The treatment of overhead in the way indicated is not a panaeca for all our industrial ills. The control of overhead in a manuer fair to the business man as well as the consumer is one step and only one step toward realizing more stable prices and eliminating those wild fluctuations that culminate in industrial depressions. Such a consideration also points this moral,—that the hope of permanent reduc-

tion of costs rests only in the greater, more continuous and more regular use and operation of our industriaal facilities.

Thousands of firms went through the recent years of full-blast operation upon a basis of overhead distribution essentially unfair to them. A start in the right direction must be made, and upon such firms is urged the consideration of adjusting overhead charges on the basis of a normal year, and it is so suggested, both as an advance in sound cost accounting and as a measure to facilitate that business revival we all desire, need and anticipate.

PERSONAL TOUCH AND SERVICE By C. W. Esmond

A notably successful ice cream manufacturer of the Middle West, who does a business of over half a million gallons per year and supplies about 80 per cent. of the trade of his home city, is a strong believer in showing his customers his personal interest in them at every opportunity.

These customers are, of course, looked after regularly by a staff of efficient salesmen, but the manager also knows all the customers personally, can call them by name and is always accessible to them either by telephone or when they call at his busy office. And he glories in a chance to do them a personal service. For instance, in a busy holiday or a Sunday when a customer runs short it is his favorite pastime to speed to their rescue, carrying ice cream in his pleasure car, which, by the way, is not a Ford, as the reader will already have guessed. As he races out with reinforcements, he not only saves the situation for and pleases his own customers, but also the service is not lost on the many other dealers who see him thus making special deliveries from time to time. He believes that the moral effect is very valuable and makes these occasional special runs as a matter of policy, though he could well afford to hire it done.

REFINED CANE SUGAR CENSUS

A preliminary statement of the general results of the 1919 census of manufactures with reference to the refined cane sugar industry has been issued by the Bureau of the Census, Department of Commerce. It consists of a deailed statement of the quantities and values of the various products manufactured, prepared under the direction of Eugene F. Hartley, Chief Statistician for Manufactures.

Reports were received from 20 establishments engaged in the refining of cane sugar during 199, and their products for the year were valued at \$730,-965706. At the census of 1914 there were 18 establishments with products valued at \$289,389.715. The value of annual production has therefore increased \$441,887,991 or 1543 per cent.

In 1919, 5 establishments were located in New York, 4 in Pennsylvania, 3 in Louisiana, 2 each in California Massachusetts and New Jersey, and 1 each in Texas and Georgia.

Recent reports from Porto Rico estimate a sugar crop of 410,000 long tons,

WHAT ARE VITAMINES?

What are vitamines? This is a question asked repeatedly since the importance of these compounds in foods has come into prominence, but no definite answer has yet been given. Investigations by scientists at universities, agricultural experiment stations, and institutions for medical research have revealed much information regarding the function of vitamines in body maintanance and building, and the parts of the various foods in which they are to be found.

That vitamines are compounds absolutely essential in the food, in order to maintain the weight of the body and produce growth, has been definitely proved. The lack of vitamines causes deficiency diseases, so named because they are due to lack of something in the diet. Vitamines are present and are needed in such small quantities in the food that chemists have not yet been able to isolate them from the many other compounds which are in foods. For this reason, we know very little of the actual character of vitamines.

According to a statement by Dr. Carl O. Johns, in charge of nutrition work in the Bureau of Chemistry, U. S. Department of Agriculture, vitamines have been classified into three different types depending upon the functions which they have in promoting well-being and growth.

The first type is known as water-soluble vitamines and these are necessary in order to obtain growth from food. Lack of these cause beri-beri, which manifests itself by disease of the nervous system and by other symptoms. These vitamines are found in seeds, in green plants, in certain bulbs and fleshy roots, and in milk and eggs, as well as in certain organs in the animal body. The seeds referred to include beans, nuts and the various cereal grains. When cereals are very highly milled in order to obtain a very fine white flour, a large part of the vitamines may be removed. Vitamines are also lost when rice is polished in order to remove the outer layers which contain most of the vitamines. It is for this reason that a diet consisting mainly of polished rice may cause beri-beri, while unpolished rice does not cause this disease.

The second type is known as fat-soluble vitamines, and these are found in butter, eggs, milk, and certain animal organs such as the heart, kidneys, and liver, and to some extent in other fats as well as in green vegetables. They also exist if smaller quantities in certain seeds. When fat-soluble vitamines are absent from the diet animals and man are subject to a disease of the eyes, which appears to be related to xerophthalmia and which, if prolonged, may produce blindness.

The third type is known as antiscorbutic vitamines—that is, those which prevent scuryy, which manifests itself by disease of the bones as well as in other ways. These vitamines are found in oranges, grapefruit, lemons and other citrus fruits, and in green vegetables such as tomatoes, spinach, and lettuce, and in eggs and raw milk. The drying of vegetables frequently destroys the activity of the antiscorbutic vitamines. The best somerce of vitamines is in the leafy parts of vegetables, and this is one of the reasons why spinach, letture, and cabbage are valuable foods,

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THE ICE CREAM TRADE JOURNAL

NEW THOUGHTS ON ICE CREAM

An Address Delivered at the Annual Convention of the Oklahoma Ass'n of Ice Cream M'f'rs

By A. C. Baer, B.S.
Professor of Dairying, Oklahoma A. & M. College

provement that we have made in Oklahoma. We have many more modern and sanitary ice cream factories than we have maintained prior, to this year, which shows that we have all made some money and also that we are looking forward to an increased business. which increase is practically assured in the prospects for this year. I believe that we make a more uniform ice cream than is made in any other state in the Union. It may have been that we fell down at times, but I know that we have a safe ice cream and have also tried to have 10 per cent, butter fat and 3214 per cent, solids in our ice cream. The majority of our ice cream factories are good. Some of you have perhaps been disappointed in some thing; however, I think each disappointment will help to strengthen us and assist us to improve. I don't believe that any of you need to apologize to anybody for your ice cream. I had some ice cream yesterday and the day before and it was all mighty fine cream. I think those of you who were not so successful in putting out as good a grade as usual, that your trouble was due to the fact that you were not able to get the proper grade of material. As a general rule all ice cream made in Oklahoma has come up to the standard and I believe has been absolutely a pure, wholesome article of food. All our factories have pasteurizing equipment and are making our ice cream safe by pasteurization. We want ice cream in Oklahoma made absolutely safe. We are making as good ice cream as they are in Wisconsin or Kansas or any-

First of all I want to comment on the general im-

The material advantage of ice cream as a food is demonstrated in the United States each day. Ice cream should be advertised as a food, not a drink, neither is it a positive luxury. In all ice cream we have 87 per cent, of dairy products, the other 13 per cent, is sugar and filler. So we have in ice cream a product made from milk and butter fat primarily and which we now know are essential foods. Ice cream is a real food containing the "vitamine" elements just as in milk and cream. A large percentage of milk is needed in building up and keeping the different tissues of our body in perfect condition. The best way to get our share of the essentiall "vitamines" is to drink milk, as it is when it comes from the cow, in butter, in cheese, or in ice cream and other dairy products. We have a regulation requiring the use of butter fat in dairy products and nothing else should be substituted in place of the pure fat, either in ice cream or in cooking or to use on the table; therefore, we should not use other oils and fats in

where else, and I sometimes think a little better; how-

ever, that does not mean that we are by any means

perfect. We still need an improvement in Okla-

homa's ice cream and I am glad to cooperate with

you at any and all times in an effort to make this im-

provement.

the manufacture of ice cream, as we have learned from tests and scientific experiments that they will not give the result that butter fat does as food.

Now just a word regarding the food value of butter fats compared with other fats. Dr. McCollum, the chemist we all have heard of, has made a statement that there are no vegetable oils, which we know of at the present time, which have the same "vitamine" clements as butter fat. We should never use vegetable oils in icc cream to take the place of butter fat.

Experiments have been conducted with white rats, feeding some on vegetable oils and others on butter fat; they got exactly the same amount to cat, were fed at the same time, but the ones fed butter fat gained in weight, while the ones fed vegetable oils died of starvation. We have tried some feeding experiments at Stillwater. One lot were fed oat meal, corn meal, bacon and water. The others got milk in addition,these rats were all from one litter, weighed the same when we began our experiment,-the ones fed on oat meal, eorn meal, bacon and water, lost in weight, while the ones fed on milk gained in weight and grew nice and fat. At the present time the no-milk rats are all dead except one; this one we took and fed on cream-you should have seen it go after that cream. So it is an absolute fact that the dumb animals as well as the human race in general are absolutely dependent upon the vital elements, found in milk, to a certain extent for their food.

You were talking about advertising ice cream yesterday in an advertising campaign. You also know we must do individual advertising along with this general advertising, but we should cooperate in a general advertising campaign. Advertising ice cream is bound to get business, it will help to a great extent in getting the value of ice cream as a food before the public and this is what we need. We should advertise and advertise freely. If we specialize in a certain ice cream we want this certain ice cream known and eaten, and there is no way to have good results but to advertise.

We have been for a number of years cooperating with ice cream factories in standardizing their mixes. Most modern factories now use a one-hundred pound mix, and the man who is still using the fifty gallon mix had better change his methods. I would not recommend a three-hundred or four hundred gallon mix, you are apt to make a mistake in calculating the ingredients on the gallon hasis and it is letter to work on the one-hundred pound mix basis. I know it was hard to get the proper mix during the War when we had to use syrup in place of sugar, evaporated and condensed milks and even milk powders, but that time is passed and we now hope to have a standard mix at all times.

I think I have something new for you in regard to scrum solids. Using 12 per cent, sugar our Oklahoma ice cream, if it contains 325 per cent, total solida, must have about 105 per cent serum solids. Without additional milk solids a 12 per cent, sugar ice cream will have 29 per cent, total solids. This means that 35 per cent, skim milk solids must be included in the 100 pound mix. This extra 3.5 per cent, serum solids improves the ice cream by making a more balanced food. A 14 per cent, butter fat ice cream will have 3.2.5 per cent, total solids but it is not as good a balanced food as a product containing 10 per cent, fat and about 10 per cent, serum solids.

Now there is a tendency and will be a tendency within the next few years to get your cream too sweet. This will be a great temptation because sugar will be cheaper, but you should stick firmly to at least 321/2 per cent, total solids and not put too much sugar into it, even though you might be able to get eight cent sugar. I hope the ice cream factories of Oklahoma will do this. A much better article of food can be made by using more milk solids. You remember during the War, some of the factories only used 9 and 10 per cent. sugar; on the other hand too much sugar has an ill effect, it makes ice cream too much like candy. Remember, therefore, you can sweeten ice cream too highly and that is another reason we do not use too much sugar, no matter how cheap it might be. I maintain that 10 per cent. butter fat and 10 per cent, serum solids makes a better ice cream and better balanced food, than one containing I4 per cent, fat with no additional serum solids,

Another thing I want to bring to your attention. We still have in America a large quantity of skimmed milk going into the sewer cach day. There is certainly some method which we could devise to use this skimmed milk. We could have during the summer time a factory, whereby, this milk could be condensed and in this way could be used for milk solids for ice cream; this is being done in the northerit states, and in this way the ice cream factories are using this surplus. We have conducted rather careful experiments during the past three scasons and have studied the effect of additional milk solids on the quality of ice cream and the effect of extra solids on the overrun. In 1918, we ran our mixes 14 per cent. butter fat and no extra solids. In 1919. 12 per cent, butter fat and 2 per cent, extra serum solids. In 1920, 10 per cent. fat and 3.5 per cent, extra solids. Practically all our mixes in 1920 contained 10 per cent, fat, 12 per cent, sugar, and 32.5 per cent. total solids. While the 14 per cent. ice cream seemed entirely satisfactory and the 12 per cent.-2 per cent. ice cream seemed as good, I believe that we had a much more uniformily better ice cream with 10 per cent, fat and 32.5 per cent, total solids. It will also be of interest to know that our highest overrun was obtained using the 1920 mix. If I remember correctly, the average overrun during the season was 103 per cent. I also know that this overrun was not too high for our 10 per cent.-32.5 per cent. mix, as the product was entirely satisfactory from the standpoint of texture and body.

I have heard that condensed milk, especially condensed sweet milk, would make "sandy ice cream." I have made many inquiries regarding "sandy ice cream." We tried our best to get some "sandy ice cream" but were not successful. We were anxious to do so however, to see if it would happen and how it happened and to work out a remedy. I do believe, however, that you will get "sandy ice cream" if you use too much serum solids. An ice cream ortaining 15 per cent. serums solids would very likely become "sandy" especially if the solids were provided by a highly concentrated condensed milk. You are all familiar with the granular texture of a sweet condensed milk when the sugar is somewhat crystalized out. You can very easily get "sandy ice cream" by using a skim milk powder which is partly insoluble or dissolves with difficulty.

I want to present for your attention a little table, giving the proportions of serum solids which I believe should be used in various butter fat mixes, on the basis of a 12 per cent. sugar mix. I should recommend the following for serum solids and total solids:

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6% butterfat mix 13.85% serum solids 31.5% total solids 87, 11.85% " 22.0% " 11.85% " 22.0% " " 11.85% " 22.0% " " 11.85% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22.0% " 22
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These proportions all require considerable skim miles where the condensed to make up the serum solid, varying from about 4 per cent. in the 10 per cent. mix, for instance, to about 2 per cent. extra, for the 14 per cent. mix. If you are calculating your mixes on the 100 pound basis and cheek your solids carefully, it is a very simple matter to standardize your mix to the above mentioned content of serum solids.

I do not believe in having too high a percentage of solids in ice cream. If you are going to use 14 per cent, of sugar instead of twelve, I suggest that you do not standardize your 10 per cent, mix to contain more than 34.5 per cent, total solids. That is high enough for a fine bodied ice cream. Anything additional will add to the cost without improving the quality to any appreciable extent, nor will it enable you to increase the overrun very much. Too high an overrun will decrease the weight per volume of your product. We also do not want to sacrifice serum solids and make up the total solids with cheaper sugar. We can get enough increase in overrun to pay for the extra solids and still have a better product, a more balanced food, and a more satisfactory and refreshing dish. We should continue the use of skim milk solids in the ice cream business, so as to utilize for human food in our product the large quantities of skim milk now wasted or not put to use as human food.

The overrun we get regardless of the per cent. of solids in the mix, determines the weight per volume of the ice eream. On the basis of a 100 pound mix, yielding 20 gallons of ice cream, the weight per gallon is 5 pounds or 25 pounds to a 5 gallon can. On that basis, the overrun is not over 80 per cent. If the weight is 24 pounds you get approximately 90 per cent and if 100 per cent. overrun is desired the weight will not be over 22 pounds. Our experiments seem to indicate that a satisfactory product can be obtained with an overrun of 100 to 105 per cent. if the mix is made to contain from 32.5 per cent. to 31 the mix is made to contain from 32.5 per cent. to 31

per cent. solids, having at least 4 per cent. extra serum solids.

If the mix is calculated carefully and no error is made in the tests and weights, it is possible to have a standard mix, without any guess work. If butter is used the percentage of fat should be tested on each lot of butter purchased. If whole milk is used, it should be tested frequently, not only for butter fat, but also for serum solids. This is done very easily with a lactometer. In reply to the question of the gentleman regarding a test for butter fat in butter, I desire to say that the only satisfactory method we have is the moisture test which is easily made, and the fat determined by difference.

Most of you know that we attempted to have an ice cream exhibit at the Muskogee Fair last fall. We did have five entries and the ice cream was scored by the following score card which I am glad to present for your consideration. The score card follows:

Flavor																				350	ŕ
Body and T	exti	11	c				٠.		,											150	÷
Fat and Soli	d«															٠		٠		201	è
Bacteria .																					
Appearance																					
Package				٠	 	٠.		٠				٠	*	٠						- 31	ř
Total									٠										1	001	i

I want to discuss this score card in detail with you this year, as I believe we have a perfect score card which will bring out quality in ice cream.

Flavor. Ice cream should have a flavor characteristic of a pure, clean, dairy product. The product should be made so as to bring out this characteristic. A product which is too highly flavored with vanilla or other flavoring or which is too sweet should be scored on flavor. Some of the defects in flavor which are liable to occur are: old stale cream flavor, old condensed flavor, dirty milk flavor, stale butter, old powder, a cheap galatine, or a spoiled ice cream powder. All have an effect on the flavor. Overheating the mix while pasteurizing also leaves a pronounced heated flavor which is undesirable.

Body and Texture. Body refers to the firmness of the ice cream. Texture to its smoothness. An ice cream has good body and texture when it stands up well in a dish, without melting, appreciably, within a reasonably time, and which is smooth and velvety to the taste and does not appear coarse or watery.

Some of the defects. I have noticed in body and texture are: shusly and weak, spongy and coarse, sandy, smeary, greasy, buttery, sticky, or slippery. Again it may be heavy or soggy, which is not desirable. You are undoubtedly familiar with many more common defects ice cream should be scored according to conditions found.

Butter Fat and Solids. The only way to determine the score is to make a lutter fat test and a solids determination. In order to score perfect, the ice cream should be of standard composition. The butter fat and solids determine the food value of the ice cream. In Oklahoma ice cream must test 10 per cent. fat or better and at least 32.5 per cent. total solids, for a perfect score. It is not necessary to have it test over 10 per cent. fat or 32.5 per cent. solids.

Bacteria. The score for bacteria is determined by the actual count of bacteria per gram of ice cream. While the total bacteria count may not give us a true indication of the wholesomeness of the ice cream it is nevertheless a definite criterion of the method in which the product was handled. Proper pasteurization of the mix, aging of the mix at a low temperature and cleanlines of all machinery and apparatus are reflected in the bacterial analysis. It is possible to make ice cream consistently in a well regulated factory with a bacteria count as low as 10,000 per gram. I am proposing that a perfect score be allowed for a bacteria count below 20.000. Then deduct a half point for each increase of 5,000 up to 50,000. Follow this with a deduction of one point for every increase of 10,000 up to 100,000. Then 2 points for every increase of 50,000 up to 300,000, and 3 points for every 100,000 increase, until a maximum of 500,000 is reached, when the score should be zero. The score for bacteria may seem rather severe, but there are factories which have consistently maintained a count below 20,000 per gram, and the score must be severe in order to cover the numerous chances for contamination of this important food product, all of which should be consistently and scrupulously guarded

Appearance and Color. A perfect tie cream should be neat and clean in appearance and appear appetizing. The color of vanilla ice cream should be a natural cream color, such as we find in the spring of the year, in the natural pigment of cream and milk. It should be permissable to color ice cream with a pure coloring material, so as to approximate the color above described. A lack of color is not near as objectionable as too high color. When a vanilla ice cream is colored almost orange, it should be scored rather severely on color. Different flavored ice cream should be colored characteristic of the flavor it represents. So that strawberry ice cream, for instance, should have a pink color, etc.

Some of the defects I have noticed in the color of vanilla ice cream are: ton yellow, off color entirely, too dark, too light, grayish, dirty color, and several others.

Package. The package should be neat and clean and present an attractive appearance. Cld, dirty, unpainted, untidy packers; old rusty, battered cans, are not perfect containers for ice cream. Never send a packer to a scoring exhibition and nail an old salt sack over the top. A nice new, clean, canvas cover adds a great deal to the appearance of the package. I would not send ice cream to a scoring exhibition and have a paper liner in the can.

That a master may be liable for the act of his superintendent in using excessive force in compelling obedience to working rules, although he was expressly directed not to use such force, if the use of some force was necessary, is held in the New Hampshire case of Richard v. Amoskeag Mig. Co. 109 Atl. 88, amoutated in 8 A. L. R. 1426, on master's liability for injury of one servant by another in enforcing discipline.

ANNUAL PRODUCTION REPORT OF MANUFACTURED DAIRY PRODUCTS, BY MONTHS, 1920

Compiled by the Bureau of Markets, Dairy Division, U. S. Department of Agriculture

MANT FACTURED PRODUCT E	01				Amount	Amount	Amount	Amount	Amount	Amount	Amount	Amount	Amount I	FOR VEAR
	das	Amount manufac- tured	Amount manufac tured	Amount panufac. tured	manufac	manufar	manufactured	manniac	manufac	tured	tured	tured		(Pounds)
Whey fullyr (made from white	3,447 4	47,131,343	44,611,230	\$4,223,817	58,935,911	84,450,757	111,345,360	105,113,497	86,069,135	73,143,545	64.968.563	53,398,348	52,205,360	835,605,866
-	31.4	136.621	146.519	184,160	217.171	322,672	420,522	346,441	309,892	291,121	306,938		164,135	3,085,978
process futter	-	767.983		773,214	7.19.358	834,040	625,540	719,757		601,254	477,067			7,530,100
	8.36	9,910,137	Ξ	14,313,011	18.074.117	28,417,406	39.391.953	31,657,904	24.663.923	21,135,513	19,872,854	13,179,776	6	242.195,707
	20	376.029	207,527	298,166	455,553	R61.703		347.106		169,746	149.127	117,972		4,346,400
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All other varieties of cheese, Sweeterred condensed milk; -	10	1,104,555	1,365,809	1,561,151	1.279.637	1,198,534	1,162.995	653,441	590,842	819,991	692,224	781.610	×76,336	12,087,12
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		31,005,821		38,510,117	39,680,508	38,383,357	40,869,785	36,779,947	30,919,951	*,	6,031,268	5,590,095		
: :	58	6,452,736	2,124,833	8.124.022	2,141,582	3,305,547	5,303,404	2,971,345	6,613,394	1,476,739	1,120,749	3,307,673	3,033,479	24,192,024
Unsweetened evaporated milk: -														
	130 9	17,077	9,149	11,998	1,112.272	120,925,727	1.294.578 133,805,202	81.545 112,076,707	184,862	258,746 74,601,851	214,39,1	400,071	46,520	5.525.034
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Prical casem (buffermilk product).	9 30	1.483.123	1.491.763	1,723,682	-1 641.155	1 584 747	1 715 586	1 592 493	1 600 8 24	1 712 905	1 755 953	1 786 047	1 506 298	19 611 071
Milk sugar (crude)	=	352,142	285,363	297,053	530,720	568,668		410,696	245,088	228,947	•	403,499	423,619	4 734.517
be cream of all kinds (Gallons) . 2,427	4.27	4,455,588	4,986,374	7.323.202	9,296,571	15,112,932	20,695,601	23,479,313	20,765,524	15.222.342	9,635,394	5.279,143	4.681,157	140,933,14

ICE CREAM INDUSTRY'S RELATION TO DAIRY PRODUCTS

Discussion Of the Work Of the National Dairy Products Committee In Cooperation With the National Association

By Joseph E. Davies

General Counsel, National Dairy Products Com., Washington, D. C.

From an address delivered at the annual convention
of the National Association of Ice Cream Manufacturers

I recall that the great philosopher, American all through, Mark Twain, was advertised to deliver a lecture on "Milk." It occasioned the audience considerable surprise at the conclusion of the lecture to find that Mr. Twain had not referred to the subject matter "milk" throughout the course of his address.

It was called to his attention upon the conclusion of his lecture, and with a twinkle in his eye, he said, "You notice I had a pitcher of milk before me, and drank during the entire evening, so my lecture was literally on milk."

It would be much more pleasant for me, and probably much more entertaining for you, it similarly I could have some of your fine I0 per cent, or 12 per cent, ice cream and discuss ice cream by eating it instead of talking about it.

The ice cream industry find its lase, of course, with the cow, a beautiful, gentle boxine animal that has made my state of Wisconsin famous. There is one cow in the country for every five persons. It is rather amazing to know that the number of cows have increased since 1907, according to the U. S. ensus, five-fold, and the number of cows in the country, according to the last census was some 26,000,000.

The dairy products' industry is one of the great industries, and the fundamental industry of the nation. The U. S. Steel Corporation employs and affords livelihood to as many men as there are voters in three sovereign states of the union west of the Mississippi Valley.

We are prone to regard the U. S. Steel Corporation as one of the greatest industries as well as one of the most efficient in the world, and to marvel at the extent of its magnitude and the number of men that it employs.

When you stop to consider only the number of men required to handle 26,000,000 cows, you can see that it is not only equal to the number of voters in several sovereign states, but means a large percentage of the male noulution of the United States.

The milk of the country, it is interesting to know, is consumed in about this percentage: in the various lines of consumption, about 43 per cent, is sold in the raw or fluid state; about 41 per cent, is consumed in butter; about 5 per cent, is consumed in cheese; about 2.9 per cent, is consumed in the condensed, evaporated and powdered milk industry and about 3 per cent, is consumed in the manufacture of ice cream, the balance being consumed by calves.

So it is rather amazing to think that the ice cream industry consumes more milk than the total condensed and evaporated milk industry of the country, with its tremendous output in foreign markets, while the market for ice cream, by the nature of the product, must be a local market.

The number of manufacturing plants that have come into existence in the growth of the ice cream industry is remarkable. I believe some 1200 plants were recorded under the census of 1914. Today, of course it is many times that number. It is indicative. too, of the fact that our standard of living has grown. and that our intelligence has grown. More people consume ice cream and more people, not only the professional physicians, recognize it as a food product, but the laity have come to regard it as a food product, and it occasioned me a great deal of amusement and interest to find that some of my professional friends, busy and unable to go to lunch, would go down to an ice cream soda water fountain, and get a malted milk ice cream soda for lunch, recognizing that perhaps it was easier to digest and fully as sustaining as a more heavy lunch,

Recognizing as you do, that the perfection of standards in ice cream manufacture all over the country, and the general attitude of the public, and the legislatures toward the fice cream industry as a whole, is a matter of far-reaching consequence to your immediate business, and that while you may not see the inseliate profit you have the wisdom to know that in the long run it is by such standards and such reputation and such confidence that your business becomes permanent, and of an ultimately lucrative character than it would if you only had the hatbrim horizon that saw no further than the immediate vicinity which you provided with ice cream?

Thus, for instance, when the question of the standards of ice cream in the District of Columbia was being considered at the Nation's capitol, and the hearings were had before the Congressional Committee, it was recognized by your officers that it was a matter of paramount consideration for all ice cream nanufacturers to have the facts properly presented before that Committee, for it was considered, and quite properly believed, that the standard that would be established by the wisdom of the Congress of the United States for the District of Columbia would have great weight in the matter of establishing standards by state legislations in the various states of the

In spite of the fact that very eminent authority, Dr. Wiley, and others, were there seeking to establish an unduly high standard of butter fat for ice to the ice cream manufacturers of the country, as well as to the public, in my opinion, that there was an agency representing you all who could not possibly be there, and that there were men in the industry big enough and devoted enough to the general interest to go down to Washington, at their own expense, to protect your interests on that occasion, and to give the facts to the legislatures.

I cite this to illustrate one industry that has the vision to recognize that the public's interest is its interests; to cite one, in my opinion, that recognizes that altruistic selfishness, enlightened selfishness, is the best lousiness.

In my opinion, the next few years are going to be years of great turbulence in public thought. It can't be otherwise. You have had millions of men who have been fighting for what they thought was freedom of the world. You have had millions of men go across the seas and leave the counter and the yardsrick and the clerical desk and get out in the open and get a lot of red blood. You have a great element in this population of our great country who think that they think, and a little learning is a dangerous thing, and the special arguments of highly intelligent demagogues are very attractive to men who are working on \$125 or \$150 a month. The clerical classes in this country today are augmenting the ranks of socialism and other "isms."

There is a degree of unrest that does not appear on the surface except as you look for it all over the country, and the result is that you are going to have epidemics of the measles and other things of a physical and mental character, so far as the body of public thought is concerned in this country; ill considered suggestions and remedies which would bring greater evils than the evils which they attempt to cure are going to be urged.

In addition to that here is a great period of reconstruction. The whole world was turned unside down by this great holocaust of war. The production of the country was distended almormally. The steel production of this country was increased twofold and the steel production of the world was increased three-fold. Prior to the war the steel production of the world was so great that the steel producers of the nations of the world, including our own, had to divide up the territory of the world so they would not be cutting each other's throats in cut-throat competition under the steel agreement of 1912.

Now, with production that has increased three-fold, simply to illustrate, with a subsiding demand for steel, you can see the problem that confronts the steel men of this country and the nations of the carth to accommodate their plants to the normal demands which are coming.

The currency of the world has been inflated abnormally. Not only has the money of the world increased several times, but the credit that has taken the place of the money of the world has increased tremendously, and the money of the world is simply the measure of value. If you have all the money of the world on one side of the scale, and all of the pre-perty of the world on the other side of the scale, they must balance in order for money to be the measure of value of property.

If you treble or quadruple the money you must treble or quadruple the prices, so you have the immense increase in volume of money of the world that induces high prices.

In addition to that, you have the tremendous demend that bas occurred here that tended to raise prices. You have a diminishing demand, you have nations all over the world with their financiers trying to consider how they can reduce the volume of currency, liquidate, if you please, contract that currency, and bring things down to normal. The problems are so colossal that no individual mind can concive, but in the providence of the Almighty, the combination of wisdom of a great many men the world over will work the problem out, but in the process of this economic re-adjustment there are going to be many trials and tribulations.

We are the soundest country on the face of the earth. Fundamental conditions are absolutely sound. For many years to come our products are going to be demanded by the stricken countries of Europe in their reconstruction. America has the greatest foreign market in the world for our manufacturers. Our standard of living is of the highest and of the most splendid character. Our intelligence as a whole is absolutely sound and strong and virile and practical. We are in no danger, but we are going to have little troubles until, as Mr. Noel said, "we get back to the main road."

Now, that is a generalization, and what has it got to do with the subject at hand and your interest?

It has this to do, that every component part of an industry is dependent upon other parts of that indusry. What affects one part of an industry affects adversely or favorably the other part of that in-

To illustrate, legislation was presented to Congress, looking to the regulation of the packing industry. It was alleged that the packing industry became a monopoly or threatened the country with a monopoly. That is not a question for us to pass upon, ves or no. That is a question upon which I would not care to hazard an opinion now. But there were those who believed it, and therefore they brought the Anderson Bill into Congress, with a view to having the monopoly controlled by license, and then what happened? To our amazement and surprise there was a provision that was contained in that bill that would require every manufacturer of ice cream to take a federal license out from the Secretary of Agriculture, and be subjected practically to the running of the business by governmental officials. Was it necessary? Why, no. It's a chinch that there could not be any monopoly in the ice cream business, because of the very nature of the husiness itself. Is there any monopoly in the other elements, the cheese or the butter or the raw milk or condensed milk? Utterly impossible, but unless there had been vigilance the chances are that that provision would have gone through, and you would have awakened to the fact that you were subject to more federal control, and the less control consistent with public safety, the better in your opinion and in my opinion and in the opinion of every self-sustaining, independent Ameri-

The amount of work that was done in order to

properly present the facts to the Interstate Commerce Commission on the express case, so they should be properly informed upon the ice cream industry in hearings that were held all over the country, was colossal. Credit has been given, as I understand it. very generously by this committee in its report to you to the counsel. The counsel in turn wishes to state that it would have been utterly impossible for any results to have been achieved unless a tremendous amount of work had been done by such men as Mr. Luick, Mr. McInnerney, your excellent Secretary, Mr. Farrell, and others, because it was upon the facts that the results were achieved, and equity and justice could be given only upon the facts, and it involved a tremendous amount of work to get those facts properly presented. Indeed, if you will permit me to say such credit as may come from this enterprise is due entirely to your committee, to Mr. Farrell and the high-minded, disinterested, energetic and insistent work which some of your members gave in the interests of you all.

In conclusion, let me voice the thought that was suggested by the very thoughtful address of Mr. Noel—that is the note that he struck when he stated that a new day brings new duties. That is so true. You know, we don't realize the blessings that each day brings us. We don't think of the blessings that come to us by reason of the form of government that we enjoy, and which our forefathers spent so much effort and blood to give to us, and we are prone to neglect some of the obligations that we owe.

Let me suggest that if this industrial representative political democracy ever falls into the throes of socialism out of which inevitably comes one man rule, because socialism means mental autocracy, autocracy of brains first, and autocracy of power second, and the man on horseback third, and a denial of your rights as independent free men by the strong man who will control and seize the reins of the vovernment as the world is constituted today-if that situation comes, then it is due to men like us, who don't render our full duty to our progeny and to those who follow, by properly safeguarding the rights which we enjoy. Let me say that in my opinion the attitude of your Association as expressed in its ideals and the protection of public interest and proper health standards is rendering a splendid service to the community in an atmosphere of enlightened selfishness that is highly commendable and is a credit to you men of this industry in the United States.

SELLING BRICK ICE CREAM

Many Ways Are Open To the Manufacturer for Getting His Brick Ice Cream Before the Buying Public

By L. W. Roszell

Of the J. D. Rossell Ice Ceam Co., Peorla, III.

From an address delivered at the annual convention
of the Illinois Association of Ice Cream Manutacturers

Generally, when an ice cream manufacturer is called on for a few remarks on any subject pertinent to the industry, he starts by telling the troubles of the past, and I suppose I am no exception, when I say that the first advocates of brick itee cream as a cold weather specialty with ice cream manufacturers met with a lot of hard knocks. However, by sticking to our guns I believe a good many of us here can now say that brick ice cream, in the winter season especially, is here to stay, and the future sales possibilities in bricks rest almost entirely upon the ingenuity and sales ability of the individual manufacturer.

Our first problem in promoting brick ice cream was the dealer. In practically every new venture of any kind, the dealer must be throughly sold on the proposition, or you do not have the enthusiasm and hearty cooperation so vital to successful sales work.

Now, selling brick ice cream has many advantages for the dealer, principel of which is its absolute uniformity of an assured liberal margin of profit. Every brick has its set cost price to him and its established selling price. All he has to do is pull the lid from the cabinet, hand out the brick and pocket the liberal net profit, without loss in shrinkage, as in bulk goods. Then comes the point of the variety of flavors that can be carried in small storage space. We all know how hard it is to try to please all the public all the time. If a dealer has a cabinet full of chocolate ice cream, about half the trade want strawkerry or something else. Bricks solve this particular problem very nicely, enabling the dealer to supply the demand for almost any flavor or combination of flavors without having a lot of money tied up in slow moving merchandise, and what is better still, maintaining and creating the good will of his customers through the service he is in a position to render them.

A multiplicity of ways and means are open to the live manufacturer for getting his brick ice cream before the buying public or consumers—not the dealers but the consumers of the dealers but the consumers. Line your dealers up on bricks. Sell them the brick proposition thoroughly. There is a demand and a mighty big one, too, for brick ice cream and if your dealers are not meeting it by handling your bricks, it's a cinch some other fellow's dealer is onto his job and does handle them.

Eight years ago I started bill-board advertising, newspaper advertising in the winter time on brick ice cream, and I had a lot of bill-boards out in the city with icicles bauging on them and the snow piled up around them and I had a lot of fellows in the advertising game tell me at home that I was crazy. But I kept everlastingly at it, and we have got them eating ice cream. This year we will sell 200,000 bricks of ice cream, and seventy per cent. of those will be sold between the first day of October and the first day of April, that is, of various sizes. So I know whereof 1 speak on that. You don't meet with very much encouragement. I know I didn't down there when I went in and laid down an advertising proposition of two thousand dollars for that. But they will eat winter ice cream if you get it up in the right kind of a package so they can take it home. Of course, you cannot get anywhere without the cooperation of the dealer, because you see he is the fellow between you and the fellow who is going to eat your product.

We all know what can be done by getting the products up in an attractive package. We can all do the same on brick ice cream, make a mighty fine quality, make it in a variety of thavors, put it in an attractive package, get it to the dealer in an attractive manner, and tell the consumer about it, and we will all have a mighty nice business.

TAX INSTRUCTIONS

The following letter from the office of the Commissioner of Internal Revenue, Treasury Department, Washington, D. C., was recently received at this office. It contains, under the date, April 1, 1921, instructions relative to the collection and return to the Government of the proper tax on sales taxable under Section 630 of the Revenue Act of 1918. The letter follows:

Daily records shall be kept by the proprietors or their agents in charge, showing the number of sales (grouped according to the amount of sale) and the tax paid thereon. The daily records of the proprietors or their agents, with copies of their monthly returns, shall be kept on file, in the place of business of such proprietors, in such manner as to be readily accessible to investigating Internal Revenue Officers.

In case the proprietor of a soda fountain, ice cream parlor or similar place of business does not use an adequate cash register or check system from which daily and monthly records may be kept, a separate receptacle shall be used to retain the tax collected by the vendor from the purchaser. Such receptacle shall be used to retain the tax collected by the vendor from the purchaser. Such receptacle shall be considered to the contract of the collected, in order to facilitate the compliation of the daily and monthly records of tax collection. If an individual liable to tax under Section 630 lax.

If an individual liable to tax under Section 630 has kept accurate records but if his records do not conform to the requirements laid down in Article 11, Regulations 53, and it appears the correct amount of tax has been remitted to the Government, the tax-payer should be instructed to change his system of recording the tax to comply with the requirements providing it appears the taxpayer was acting honeatly toward the Government and was not negligent or careless in keeping his records.

If a dealer in ice cream, soft drinks, etc., has kept no records or insufficient records, or for any reason has kept inaccurate records, he should be required to install and keep an accurate set of records complying with the regulations, and also he should be held liable to the specific penalty imposed by Section 1308 of the Revenue Act of 1918, subject to compromise for failnre to supply information necessary for the purpose of computation, assessment or collection of tax. The amount to be offered will, of course, depend upon the flagrancy of the offense, but this office is not inclined to accept an offer in compromise of less than \$10,000 in an ordinary case of failure to keep an accurate record.

It is only reasonable to require taxpayer to keep accurate records open for the inspection of Internal Revenue Officers, which will show in detail the taxable sales made by the vender and the tax collected and paid over by him, and the Collector will take every precaution to insure the keeping of records by all parties in his district taxable under Section 630, which will strictly conform to the requirements of Article II of Regulations 53.

(Signed)

A. E. HOLDEN.

A. E. HOLDEN, Acting Deputy Commissioner.

WHAT CONSTITUTES A CONTRACT?

An interesting case was recently brought up before a Canadian court, which might establish a precedent in certain business dealings carried on by telegraph or long-distance telephone. The main issue of this suit, as brought out in the trial, was "what constitutes a contract."

An American firm was plaintiff in a suit against a firm in Montreal for breach of contract. The contention of the plaintiff was that on December 27, 1918, the defendant, made certain quotations on a shipment of tapioca; two days later the plaintiff wired the Canadian firm accepting the price and asking the price for shipment of "100" or more. The next day the defendant wired the American firm saying that it could not ship "100" but would ship 25 tons of seed and 25 tons of pearl, at a price which was slightly higher than the previous quotations. In the meanime the plaintiff had written a letter to the Canadian firm confirming the previous wire, and, as it contended, making the contract binding.

There was some discussion as to whether the figure "100" appearing in the telegram referred to bags or to tons. It seems from the evidence given that the custom has been to quote tapica on a basis of bag lots. The American firm, however, claimed that it always hought on a basis of tons, since its distribution is on a large scale. A point, however, was brought out by the counsel for the plaintiff that in the answer to the telegraph order the defendant said, "Can not ship 100 but will ship 25 tons of each," referring to seed and pearl tapioca. In the final issue, however, this did not feature, for in the courts finding this point of tons or bags was not mentioned.

After some defiberation the court ruled that by the telegrams which were exchanged between the two companies the contract was not consummated and no definite or legal obligations were laid upon either party; as a result, the action of the plaintiff was dismissed. From this finding it appears that when telegrams such as featured in this case are exchanged between parties floing business in Canada no contract is entered into; that letters in writing and signed by the contracting parties are necessary to make the contract binding.

Imports as well as exports decreased during the nine months ended with March, 1921, as compared with the similar periods of 1920.

SCIENTIFIC BOILER FEED WATER REGULATION

The Rate of Feed Water Has a Decided Effect Upon the Steaming Capacity of a Boiler

By Roland Moeller, M. E.
Of the Geo, H. Gibson Co., New York, N. Y.

The first efforts in boiler feed regulation aimed at keeping the water level in the boiler as nearly constant as possibe. Later, in about 1912, it was realized that keeping the water level constant at all times had decided disadvantages.

Prior to that time, automatic boiler feed regulation depended on a combination of floats, bilot valves, diaphragms, springs, etc., which would give the feed water valve a full opening until a certain maximum water level had been reached in the boiler, and then would close off the feed water valve entirely, until a certain lowest limit in the water level had again been reached. This gave an irregular intermittent feed, which insofar as effect on the generation of steam was concerned, was not much of an improvement over hand regulation.

While an automatic mechanical device that is absolutely reliable has never been made, there amany automatic mechanical devices which are far more reliable than a human being, especially where the apparatus is given a reasonable amount of care and attention. It is for this reason that a water regulator properly designed will add much to the safety of operating a plant.

The more intelligent help in the plant is relieved of a great deal of the strain and worry of watching the flow of feed water and its regulation, and the morale of the boiler-room is increased to the extent that more interest is taken in other matters of vital importance having to do with the economy of the plant.

A continuous flow of feed water with gradual variations in rate saves the boilers, heaters, economizers, meters, water pumps, piping, and all connection from shoeks and strains due to violent and extreme fluctuations in the rate of feed water flow peculiar to many forms of old style regulators.

The continuous flow also makes possible the use of smaller-feed pumps, feed water pipe lines, connections, valves, etc., because when the feed water supply is continuous, the rate of flow at any given time need not be as great as when water is fed intermittently.

As the equipment in boiler rooms became more and more involved with the addition of water softeners, economizers, feed water heaters, superheaters, temperature, steam and water meters and recorders, and other apparatus to promote economy and efficiency in the generation of steam, it became evident that the rate of flow in the feed water had a decided effect on the efficiency of all of this equipment and on the legibility of the charts produced by the various recording meters.

A water softener is calculated to handle a certain number of gallons of water per hour on the basis of a continuous even flow. Where the flow is intermittent and irregular, a much larger water softener must be installed to handle the same quantity

of water and its operation is far less satisfactory and economical than it would be if the flow of feed water were continuous and more closely in unison with the rate of steam output of the boiler.

The same is true of economizers and feed water heaters. When the flow of feed water through these is reduced, the feed water reaches an excessively high temperature and may even turn into steam, resulting in water hammer and other troubles in the feed water system. The apparatus under these conditions allows heat to escape without being absorbed. On the other hand, when at intervals the feed water valve is opened wide, the feed water rushes through at such a high rate that it is not warmed up to a temperature commensurate with economical bolier operation.

The rate of feed water flow has a decided effect upon the steaming capacity of a boiler itself. A full opening of the feed water valve may pass enough cold feed water into the boiler to absorb all the heat generated by its furnace without generating any steam whatsoever. Intermediate rates of feed water flow will, of course, reduce the steaming capacity of a boiler in proportion to the flow of the feed water.

a boiler in proportion to the now of the level water. Bearing this in mind, it is evident that there are frequent periods in the operation of a steam boiler when it would be desirable to reduce the rate of feed water flow so as to make possible the maximum generation of steam. This is particularly true after a period of low load when a sudden peak load comes on. Under these conditions the furnace must be given time to catch up with the new peak load conditions, and if, during this time, the rate of feed water flow is temporarily reduced, the boiler has a far better chance to meet the sudden increased demand for steam, when little heat is being consumed in heating up feed water to the boiling point in the boiler.

On the other hand, should the load suddenly drop off after a high load period, it takes some time for the furnace to slow down to where it generates heat at a rate in harmony with new load conditions. It is then desirable to increase the rate of feed water flow temporarily so as to absorb the extra heat generated by the furnace during this brief period.

Again, where a number of boilers are acting in unison, fewer boilers with scientific feed water regulations can be made to do the same work. With unscientific feed water regulation, the steam output of some of the boilers may be so affected by the admission of feed water during a high load crisis, that their addition to the total steam supply is very much curtailed or even reduced to zero when it is most needed. With scientific regulation, on the other hand, all the boilers would be delivering their maximum output, the rate of feed water flow being reduced to a minimum in all of them at the same time to make this possible.

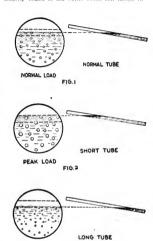
A good automatic feed water regulator should, then, feed continuously as long as there is a load on the boiler. It should temporarily reduce the rate of feed water flow when there is a sudden increase in load and temporarily increase the rate of feed water flow when there is a sudden decrease in load. It should keep the water level high under low loads and low under high loads. During steady loads, it should maintain a constant water level by maintaining a constant rate of feed proportionate to the load. During gradual changes in the load, it should gradually adjust the rate of feed in proportion to the chances in the holler load.

A regulator functioning on these principles acts as a sort of compensating boiler governor, that is, it supplies the means of absorbing the excess heat generated by the furnace during the brief period following a sudden falling off of the load when the furnace has not had time to adjust itself to the new conditions. It prevents the absorption of heat by the feed water when the furnace has not yet had time to catch up with a sudden increase in load, and all the heat that is generated is required for steam making. It utilizes the volume represented by the difference in the levels of the water between the high and low water marks in the boiler as a sort of heat reservoir, and so regulates the water level as to insure dry steam at all times. It guards against damage due to too high or too low water level at any time.

It has been conclusively demonstrated that the water level of a steaming boiler undergoes pronounced fluctuations which have a direct relation to the rate at which it is producing steam. This is due to the increased volume of steam bubbles present in the water when the steam output of the boiler shipk. Illustrations Figs. 1, 2 and 3 show the variations in the water level in a steam boiler containing the same weight of water under normal, peak and low load conditions, and how the water level in a boiler, changing with the load, alters the length of that portion of the thermostatic tube which is exposed to hot steam.

A regulator of extremely simple construction is shown in Fig. 4, connected to the boiler. This

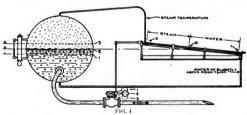
justed to maintain the water level between any desired limits. The connections to the boiler as shown in Fig. 4 are of the simplest, so that any help ordinarily found in the boiler room can install it.



In this feed water regulator a metal tube having a large co-efficient of expansion is connected to the boiler in such a way that the level of the water in this tube varies with the level of the water in the boiler. The water in the lower end of the tube, not being

FIG.3

LOW LOAD



regulator consists merely of a straight tube, a lever, a heavy iron base, and a rugged balanced, practically frictionless valve. Such a regulator is easily ad-

exposed to any source of heat, becomes comparatively cool, while the upper end of the tube above the water level is kept hot by steam from the boiler to which it is connected. As steam slowly condenses in the upper part of the tube, it is returned to the boiler through the lower end. If the water level in the boiler suddenly rises due to an increase in load as in Fig. 2, the level of the water in the tube also rises and the length of the tube above water containing hot steam is reduced. If, on the other hand, there is a dropping off of the water level due to a decrease in load as in Fig. 3, the length of the tube exposed to hot steam is increased by the amount the water level recedes in the tube. The portion of the tube which is exposed to the hot steam expands, and the greater the length that is so exposed, the greater the increase in the over-all length of the tube. This difference in the overall length of the tube between high or low water is utilized to operate a valve which controls the rate of flow of the feed water

When there is a sudden increase in the demand for steam, the water level in the boiler rises. The length of the tube exposed to the hot steam is decreased and the length exposed to the cooler water is inereased. Consequently there is a contraction, and the overall length of the tube is decreased and this in turn reduces the opening of the feed water valve. If the high load continues, the level of the water will, of course, gradually drop off until the water level in the tube comes to a point where the feed water valve again begins to open. The opening increases gradually until a uniform rate of feed is reached, which is equivalent to the rate at which the water is used up in making steam. If the demand for steam is high, the demand for feed water is high, and the feed water valve must have a wide opening. To get this, the tube must expand more. This turn can only be brought about by a lower water level, and that is exactly what is desired under high load conditions.

If, on the other hand, the demand for steam suddenly drops off after a continuous high load, the water level in the boiler falls immediately, and with it the level of the water in the tube. The length of the tube exposed to hot live steam is increased, causing an increase in its overall length. This in turn opens the feed water valve so as to admit water to the boiler at a greatly increased rate until not only the former level is reached, but until the level is higher than the one under high load conditions. To reduce the flow of feed water to conform to the reduced demand for steam, the opening of the feed water valve must be reduced to less than it was when the demand for steam was high, and to accomplish this, the thermostatic tube must contract more. It does this only with a rise in the water level. Higher water level during low loads is very desirable for heat storage purposes, as explained before, and is entirely permissible with light loads.

SUGAR PRODUCTION IN FRANCE

The quantity of sugar produced in France from September I, 1920, to January 15, 1921—that is, for the first four months of the 1920-21 sugar-crop year—amounts to 285,375,383 kilos, against 148,653,184 kilos for the same period of the previous crop year.

DEBATE ON SALES TAX

The delate on a sales tax at a luncheon of the Chicago Association of Commerce by Meyer D. Rothschild, chairman of the Business Men's National Tax Committee, who spoke for the sales tax, and James Drostall, of Chicago, member of the National Industrial Conference Board Tax committee, who oposed the sales tax, brought out illuminating points for consideration. The following chart shows roughly the taxes advocated by these two men.



Reproduced from April I, issue of Factory

Mr. Rothschild maintained that, inasmuch as the burden of taxes rests finally on the consumer, a tax on sales, beginning with the producer of raw materials and going down the line until finally sold to the public, and in any event not exceeding an average of 3 per cent., is the logical method of taxation. He further argued that the income tax as it exists, with some modifications, should be continued, but he insisted that the income tax on corporations, the excess profits tax and minor business taxes are wrong; that they place a burden upon industry which when finally paid by the consumer is multiplied by two or three or more. Congress, in its effort to get the huge revenue which it needed to conduct the war, made its surtaxes so high on personal income that it drove capital out of war-time industry into non-taxable securities and investments, with the result that many of the very men Congress attempted to tax are paying practically no taxes whatever. Another subject which should be attended to is the special sales tax, special excise taxes on selected industries, selected in a haphazard manner and being wholly un-American.

Mr. Forstall in reply announced that to shift the taxes from the lussiness of the cohintry directly on to the shoulders of the public could not posishly become a reality; that it repudiated results of a hundred years' experience in taxation problems in Great Britain and America. And furthermore there is no such a thing as a general turnover tax. Canada approximates it closer than any other country; her sales tax is designed to exempt certain industries and these exemptions are being increased daily. And as for the 1 per cent. tax, it is a myth, for when it is pyramided, figures are at hand to show that the tax may reach 20

per cent, or 30 per cent, in some cases. A 1 per cent, tax on businesses is not an equal tax for all businesses some turn over six times a year and some once in two years. There one has twelve times as much as the other. A 1 per cent, equality is mere imaginary countily.

The program Mr. Forstall advocates with regard to the sales tax is simply this; that the percentage of taxes which hear directly on the consumer should be kept down to a percentage of something like 25 per cent. to 30 per cent. of 30 per cent. of ath the taxes; that the excess profits tax should be alleviated or done away with; that a graded income tax should be maintained; and that there should be some tax-exempt industries; in short, that 75 per cent. of the taxes should be paid on the basis of ability to pay, and the other 25 per cent. should be paid by everyone. This would distribute the burden cupally, place most of it where it can best be borne, and yet make a majority of the people pay enough to foster interest in government.

Both men argued for a customs tax approximating \$350,000,000 to \$500,000,000.

The chief difference between the new and old sales tax is the radical change from business taxation to personal taxation, and especially in regards to the extent of the change proposed.

CONDENSED MILK MARKET

Manufacturers of evaporated milk report conditions to be greatly improved for that commodity. The reduction of unsold stocks of approximately 44 per cent. on April 1 as compared with March 1, and an increase in unfilled orders of 279 per cent, confirms this report. Price of evaporated milk during March showed little change, with a range of \$4.42 to \$6 and an average price of \$5.61 per case. Unsweetened evaporated whole milk, in bulk, sold at \$9.62 per cwt. while unsweetened evaporated skimmed milk sold for \$5.06. The exports of evaporated milk during March. 1921, were approximately 500,000 pounds less than in March, 1920, when the amount exported amounted to 19.318.000 pounds. Of the shipments during March, 1921, 514 millions went to Germany, 31/2 millions to Poland and Danzig, and nearly 81/2 millions to the United Kingdom.

The market for sweetened condensed milk has been distinctly draggy, both for bulk and case goods. Unsold stocks of case goods in the hands of manufacturers were reduced 41 per cent, during the month of March, but on April 1 the unfilled orders were practically nil compared with the stocks in the hands of manufacturers. The price of sweetened condensed case goods ranged from \$5.25 to \$10 per case during April, with an average of \$7.97, which was 7 cents per case less than the average price for February. There has been a very limited demand for sweetened condensed bulk goods and the range in prices has been rather wide. The average price for the month of March for sweetened condensed whole milk, in bulk, was \$11.79 per cwt., with sweetened condensed skimmed milk selling at \$6.75 per cwt. The downward trend in the price of sugar should help out the manufacturers of sweetened condensed milk. Ex-

ports of condensed milk during March were 29,000,-000 pounds or one-third the exports for the same month during 1920.

The improved conditions in the evaporated milk market was reflected in higher prices paid to producers for milk in some sections. The average price paid for milk by firms manufacturing both bulk and case goods during April was \$223 or approximately 1 cent per gallon more than the price paid in March. The average price paid by firms manufacturing bulk goods only was \$2.29 per cwt. in April, compared with \$2.35 in March.—Bureau of Markets, U. S. Dept. of Agriculture.

NATIONAL ASSOCIATION NOTICE Important Notice

President Martin has requested that a bulletin be sent to the members with reference to the attitude of the National Association regarding the use of coccanut oil or other foreign fats as substitutes for milk fats in ice cream

There are a number of firms throughout the country soliciting lussiness from ice cream manufacturers on milk fat substitutes, and rumors occasionally develop to the effect that here and there an ice cream manufacturer is using such substitutes.

We therefore take this occasion to reiterate what has been stated in former bulletins—that is, that the National Association of Ice Cream Manufacturers is unalterably opposed to the use of substitutes of any kind for butter fat or other dairy products in ice cream.

While it is thought that no reputable ice cream manufacturer would wilfully make such substitutions, yet it is deemed advisable to again call attention to the matter, in view of occasional rumors developing.

President Martin states that the National Association will aid food control officials in the prosecution of any ice cream manufacturer using substitutes for milk fat or other dairy products in ice cream, and if such manufacturer is a member of this Association charges will be preferred against him with a view to having him expelled.

Furthermore, we ask members of the Association to promptly report to this office information they may have at any time relative to the use of the substitutes mentioned by ice cream manufacturers. All such information will be considered strettly confidential and will be taken up by our Executive Committee for a thorough investigation.

Bulletin No. 45, April 11, 1921.

DAIRY PRODUCTS CAMPAIGN

The National Dairy Council reports another milk and dairy products campaign underway, namely in Youngstown, Olio. The campaign is being handled by the National Dairy Council, with the cooperation of the following local organizations of Youngstown: Federation of Women's Clubs, Public Schools, Community Corporation, Chamber of Commerce, Red Cross Organization, Boy Scouts, Allied Council of Social Agency, Youngstown Board of Health and Federation of Churches.

OBSERVATIONS AND OPTIMISM

A General Discussion In Which a Few Suggestions Are Offered to Ice Cream Men By Wyn B. Morris

By Wyn B. Morris
Of Barker, Duff & Morris, Pittsburgh, Pa.

From an address delivered at the annual convention of the Association of Ice Cream Manufacturers of Pennsylvania

When I look at the program I find I am to speak on "Observation and Optimism." I take it that my speech must be tinged with optimism. Well, I am an optimist. I never think of leaving home even for only one day without carrying a cork-screw. That is a sure sign of optimism. I might incidentally remark that, while I have failed in social amenities for some years, I think it is the most popular piece of American jewelry which I have ever seen anywhere.

We are an optimistic race. Optimism is always started away Juack in the early days. When the prodigal returned we killed the fatted calf. Today we don't bother killing the calf, we shoot the bull. It amounts to the same thing and saves the feed. It is the modern American way of doing it.

Now, gentlemen you are all saying, get down to cases. What is his particular line. My business takes me pretty well over the country. I make some long, and sometimes wearisome journeys. I can look out of this window and see the Atlantic Ocean, and perhaps six weeks from now I will look out of my window and see the great Pacific Ocean. In these wanderings around I meet a great many ice cream manufacturers, but I like to see them, I like to study them. I have a habit perhaps of sizing up what makes successful men. I am going to wander along a little while and try to entertain you and amuse you and try to hold your attention with some observation of ice cream manufacturers, but first I want to talk just a little bit about the business because I am most thoroughly interested in the ice cream business. There is no doubt about that, I am thoroughly interested in the business. To my mind the maker of ice cream is just as much a captain of industry as the maker of steel, or of automobiles, or the banker. He is making a food product, an important product in American diet. He is making it on a very large scale today, a larger one than any of us dreamed of. He is working in one of the newer businesses, and I will say this for him, that while he does not seem to have the glamor of the great industries, yet, nevertheless, it is a great big sound, basic industry in American life. Sometimes I wonder whether the ice cream manufacturer just realizes how big and how important it is. Sometimes it seems to me, and perhaps I am wrong in this and if I am wrong about this judge from your own opinions, but sometimes I do not think he has always convinced his banker just how big it is, and they don't realize just how big it is. Sometimes I wonder whether his board of trade, or chamber of commerce knows just how important and big his business is to any town, or knows the general run of it. In other words to my mind it is a fine big important business. And while from a commercial

standpoint, from the profit and loss standpoint, the fact that it is purely a modern business means nothing, yet, nevertheless, it is, and you can throw our your cleest a little bit, because it is primarily and first of all an American business. Any of you gentlemen who have been over on the other side and have tried to get ice recent realize that no other country knows anything about it but this country. The ice cream manufacturer is filling I sity a very important noteh in our commercial life, and an ice cream manufacturer in this country with its great future to my mind is a real captain of industry.

Now getting right down to this thing, I sometimes wonder whether some of you look at it in jus; the right light. Sometimes I think some of you, perhaps none of you, have got the vision of the thing, yet here and there I find men in this business who seem to me to be cluttered up with details. I have one in mind right now that I go to see now and then. His life seems to be one blazing mass of little details. We will be in the midst of an important discussion. but he seems to have his finger on every little bit of his business whether it is necesarry or not. I think that every man has that feeling of pride and does not ever want to let go of any portion of it. Why the devil don't you play golf a bit? Why don't you get away a little bit from that intolerable mass of detail. This friend of mine and I will be talking and some one will come in and tell him about some trifling details. I often think, "why does not that man get a little bit further away from his business. why doesn't he stand on the outside of that husiness once in a while and look it over from the outside and see just how big it is?" Sometimes I wonderand this again is only my own observation, and don't take it from me, it will not hurt my feelings if you think that young chap does not know anything, the probability is that you will never say it to me anyway-I often wonder whether he is giving his lieutenant as much chance as he ought to have. I know here and there, there are some pretty good corking fellows who need a bit of responsibility. I wonder if we let the other fellow grow. The manufacturer or the head of the plant, is he giving the other fellow, his own man, a chance?

I have in mind an office that I was very intimately connected with for a long time. The head of a certain department insisted on seeing every letter that was written, everything had to pass through his hands. There is not a bit of originality in that business, and at the end of eight months that business was dying away, and also incidentally every man in that office got out and took another job P. D. Q.

I talked with a lumber man the other day who is breaking in an assistant to take his place. He said, "He sits opposite to me, and I hear his telephone conversations, and his dictation and all the rest of it, and I can hardly keep my hands off of him. But I do keep my hands off of him because I found out at the other end that he is getting the same results that I get, but he goes at it in a different way, and approaches things from a different angle, but it does not seen like my way of doing things. The main point is he gets there, and I am letting him try himself out. I would not be surprised that working around the plant there are some fellows there that can try themselves out. Let us see what they can make out of it.

One of my other idle observations, and probably this is mostly idle, is the amount of energy and the amount of time given to the shipping business. Probably 1 do not see the thing just right, sometimes I think, we all think, that our cows in the other fellow's pasture look a little bit sweeter and a little bit finer than the cows in our own pasture, but I suppose there is an advantage in shipping the ice cream right out of your plant. I often wonder why there is not more intensified cultivation of the trade right in the shadow of your plant, or in your own home towns. I know it is a splendid thing to have your ice cream go fifty, or a hundred, or two hundred miles, and all that sort of thing, bringing it good publicity, and so on, but it seems to me that there is a lot of cultivation that can sometimes be done right at home.

I know too, in the way of observation, that it has been pretty hard to make a little real money in the last year or two. It hurts me because I have got two youngsters who are human gormands when it comes to eating ice cream cones. It hurts me to pay eleven cents for a cone. It hurts me when called upon to hand over an iron man for two sundaes and get no change.

It burts me on that side, and on the other side it hurts you that you don't have the gallonage that you think you ought to have or that the other fellow has. Probably these things are existing right now, and we all know it, and it looks like a pretty serious question to us, this question of prices, but I want to just say by way of observation that we have been on tenter-hooks for the last five years. We have had a war and all that goes with it. The old team of supply and demand that have been pulling together ever since, we will say, Adam demanded and Eve supplied an apple; that team which has pulled together so splendidly, pulled apart here sometime ago. About the middle of the war demand went plunging ahead and supply hung back. but the old law is still in existence, that team is coming back, that team will inevitably come back, nothing in the world can stop it. The public will quit and is quitting paying fancy and fictitious prices. Things are coming and will come down in price. but when will they come down? Why isn't that time here now? The war is ended, the tumult of the issue has died away. Why aren't we back to where we were about five years ago? Some of the older chaps like Pop Crane who can still remember the Civil War, can still remember that it took thirteen years to reduce prices then.

The dollar has about fifty cents value three years after the war ended. The price level three years after the Civil War was twenty points higher than it was at the signing of the armistice, and when we think that prices were never like they are now, I just will remind you that three years after the Civil War, and for a period running on thirteen years thereafter, flour was twenty-two dollars a barrel, sugar was thirty-three cents, butter was seventyfive cents, coal fluttered around nineteen dollars a ton, a spool of thread cost thirty cents, a vard of muslin about seventy-five cents; so that after all the condition is natural. It is irritating. Surely it is irritating, but the prices are going to come down and are coming down, and eventually every product will be delivered at what the public will consume it for. Supply and demand will fix that,

I cannot help but also point out that ice cream manufacturers have been getting a little bit too. Don't overlook that. The other day F sat with two bankers, and one of them said, "Gentlemen, it is impossible to make any real money these days. When we get through with the income tax collector and the excess-profit tax, and the rest of it, there is nothing left." A 'gentleman said, "Well, maybe you are right, but still I have noticed that a little bit sticks to our fingers every time." I think that is pretty well the case with ice cream manufacturer; a little bit, just a little bit has stuck to his fingers right along. This war and these increasing high prices and all the things that have transpired have helped his business, don't ever forget that.

About four years ago when we were getting into that fracas, there was a good deal of fear and trembling, and we had a lot to be troubled about as far as I can see. There seemd to be a good deal of concern on the part of the various manufacturers as to what was to become of the sugar situation, and whether it was going to be prohibited. Still I would respectfully call your attention to the fact that I have generally observed that it has done quite a good deal of good. At any rate it brought together your associations, both national and local. It was not realized that the organizations were very urgently needed until it became necessary to get action with respect to restrictions of privileges or anything of that kind. It showed the value of organization.

I am somewhat reminded of a little story that seems to fit right in here. A Kentucky colonel had been out to a party. The old colonel had a goodly supply of mint juleps on board, and in the common slang of the day the colonel was carrying a bun, and as he wavered his way along through the southern night feeling like a prince he heard a rattlesnake immediately in front of him. The colonel quickly stepped over on one side and then started forward again, and almost immediately he heard the whirr of the rattlesnake. The colonel stepped quickly over to the other side of the road, and again heard the whirr of the rattlesnake immediately in front of him. Then the colonel summoned all of his courage, and standing up straight, he faced what he thought was the rattlesnake, and said, "Strike, damn it, strike. I will never be any better prepared than I

am right now." And if there is anything in the way of trouble this organization will never be better prepared than it is right now at the end of the war.

I also note with a good deal of pleasure in the way of observations that the manufacturers are beginning to give more attention and more thought to the subject of salesmanship. I am not going to talk on that subject, although that is the thing that perhaps the gentlemen who know me expect me to talk on, but I shall keep away from that entirely, but

merely in passing let me say that the subject of salesmanship is one that naturally interests me. I notice one talk on that subject on your program, and I understand that at your national meeting three men are going to give their views on it. More attention will be paid to the salesman in the future than has been done in the past. The sale of ice cream seems to be an impotrant thing. The salesman is coming into his own these days.

ICE CREAM COURSES AT A. AND M. COLLEGE OF TEXAS

Theory and Practise as Taught In the Dairy Husbandry Department of That Institution

By J. A. Clutter

Associate Professor of Dairy Husbandry, A. and M. College of Texas

As the state of Texas has become more thickly settled, the large plantations and ranches have been broken up into smaller tracts. Today many of these farms are primarily engaged in producing commercial dairy products as there are fifteen cities and innumerable towns which must be supplied with ice cream, milk, butter and cheese. In the past dairy products were imported into Texas, but today cows instead of products from the cow are being imported. The cattle fever tick is being driven from a large area each year and in the near future the dairymen will be rid of this best.

As the state has been developing, its Agricultural and Mechanical College has also been making rapid strides in an educational way. The Department of Dairy Hushandry, which was created in 1910, stressed the production phase of dairy work during the period from 1910 to 1918, as it seemed necessary to stimulate production in order that the state might not be dependent on other sections for its dairy products. At the present time the volume of butter, ice cream and condensed milk produced is increasing rapidly and the demand for trained creamerymen exceeds the available supoly.

As a result of this development the Dairy Husbandry Department offers a dairy manufacturers course which is open to the junior four-year agricultural students who have taken the general freshman elementary course in dairying. In this course the making of ice cream is stressed; the students devoting two hours each week to class room recitation and lecture work, and two hours each week to laboratory work. It is not intended that the students will obtain enough training by taking this course to become expert ice cream makers, but rather that they will become familiar with the underlying principles of the industry and also familiarize themselves with the problems which the ice cream manufacturer encounters.

In order to make the dairy manufacturers' course practical as well as theoretical, the Dairy Husbandry Department maintains a commercial creamery and manufactures all the ice cream consumed by the residents of College Station, The students assist in manufacturing this ice cream and by so doing become familiar with the art and science of making a superior product. They are also required to keep books on the plant operations and thereby becoming familiar with the marketing and business management phase of the industry.

The ice cream laboratory is equipped with a 40-qt. horizontal brine freezer, emulsifier, ico breaker, hardening and brine tanks, brick moulds, etc. A six-ton compressor furnishes the necessary refrigeration for a small refrigeration for an small refrigeration for an amal two brine tanks. A modern 200-gallon pasteurizing vat has recently been installed, and is used to concentrate whole milk and skimmed milk. Very good results have been obtained by using concentrated milk in the ice cream mix. "The Book of Ice Cream," by Fisk, is used as the class theory text and is supplemented by the leading bulletins dealing with the subject, ice cream.

Due to the increased cost of all materials that enter into the ice cream mix, the standardization of the mix, the nature and cause of the swell and the factors influencing the swell, are especially stressed in the theory work at the present time. And as a means of assisting the industry along the lines of increased consumption of the production the food value of ice cream is also being stressed. Considerable time is also devoted to the study of mechanical refrigeration.

Following the completion of this course, which is given in th spring term, the dairy manufacturing students are encouraged to accept positions in commercial plants located in this state and obtain practical experience during the summer vacation prior to the starting of the senior year's work. There are a large number of commercial ice cream plants in operation in this state and the number is being increased each year. And as these concerns are requesting our department to furnish them with trained ice cream makers and managers a marked increase in interest on the part of the college students is being manifested in this ice cream course. During the coming year the college expects the number of students who will major in dairy husbandry to be four hundred per cent, greater than last year.

THE POSSIBILITIES OF NEW FUEL MIXTURES

A Discussion That Deals With the Production of a Cheaper and Cleaner Substitute for Gasoline By Mixing With Engine Distillate a Small Amount of Ether and Alcohol

By. E. Humboldt

From an Article in Power

During the last few years there has been a treinternal-combustion engines for motor cars, tractors, power boats, airplanes and all-around purposes generally, but the production of light fuels has not kept up with the demand.

The big oil producers have been steadily increasing the gravity of their motor fuel for the purpose of increasing the supply, but the quality has been correspondingly lowered and the proportion of low-boiling-point products has become too small for satisfactory results. This is to be observed more particularly with engines that are hard to start in cold weather. True, some engines run fairly well with heavier fuel, such as engine distillate, kerosene or mixtures of both, and most engines can run on them when they have become sufficiently hot. These heavy fuels have a somewhat higher thermal value than gasoline and under proper conditions could be capable of a higher efficiency. But the ordinary engine is not built to use them economically.

When using any fuel the boiling point of which is too high, the vaporization is imperfect and a good deal of the liquid is entrained with the air through the intake manifold as a fine spray or, rather, a mist. The explosion is not satisfactory because there is no intimate mixing of the liquid and the air. The combustion is imperfect, and the exhaust carries away a good deal of intermediate gaseous products and of course a corresponding amount of heat units. Moreover, the liquid spray coming into contact with the hot walls of the cylinder always "cracks" more or less and leaves a hard deposit of carbon which adheres to the metal parts and must be foreibly seraped away.

Engine distillate has gone the same way as gasoine—up in price and down in quality, so that what was bought a few years ago for 5 or 6 cents a gallon now costs 13 cents or more. Leaving aside the petroleum products, one finds that there are few liquids susceptible of being used as engine fuel in a practical way and at a reasonable cost; the lower members of the aromatic series, such as mixtures of betracol and toluol, with a small amount of naphthalene and other impurities, have a high caloric power and are fairly volatile, as well as low in price. However, the visible supply of those products is limited.

Alcohol is also a good fuel and one that has the merit of burning cleanly. At the present time it is too expensive for ordinary use in this country and the supply is limited as well. Still, there is an abundance of materials capable of being used in its manufacture, and whenever our Government sees fit to remove a part of the red tape that fetters that industry, we shall most likely see industrial alcohol orduced cheaply and in large quantities. There is

no doubt that under proper conditions and by taking care of the hyproducts of the fermentation, it could be manufactured at a cost well under 25 cents per gallon in some of the large plants that were built forwarp purposes, but it is doubtful whether it will ever sell at such a low price under a heavy demand—at least not for some time to come; consequently, its use as an all-around fuel need not be given any immediate consideration, insamuch as it can be used to best advantage only in engines specially built for that purpose.

Although alcohol burns cleanly, leaving neither smoke nor coke, it has not so high a calorife power as betzol, and a mixture of both, in the right proportions, is better for all purposes if something else, like gasoline, is used for starting. When the engine is heated up, it generally runs very well on such a fuel. The Germans made good use of it during the war for airplane work, a separate tank containing gasoline being used for starting the engine. It was then cut out as soon as the machine had attained a speed at which it could use the higher fuel.

The relatively high prices of all these liquids and their troublesome use, as well as their scarcity at the present time, prevent them from coming into universal use, although in special cases they may prove to be just the right thing.

All kinds of "dopes" have from time to time been put on the market as carbon removers, boosters, etc., and all kinds of claims have been made regarding the performance of those compounds. Some were going to take the place of gasoline; others would nearly double the mileage and reduce enormously the cost of running a machine, and so on. And naturally, in spite of their slight cost, they have been put on the market at exorbitant prices. As carbon removers most of them are fairly good, although too costly, but their other qualities exist too often only in the dreams of their promoters, and this is probably the reason why most of them are not quite successful, commercially, and sooner or later die of oblivion.

Alcohol, when mixed with either gasoline, engine distillate or benzol, makes a very efficient carbon remover, or rather a carbon preventive. One of its derivatives, ethyl oxide, or ether, is also a substance which gives a clean combustion and, moreover, possesses a very low boiling point, about 35 to 36 deg. C. for the commercial product, which is much lower than that of gasoline. It mixes in all proportions with alcohol and possesses the remarkable property of being soluble in the petroleum hydrocarbons and of increasing the solubility of alcohol in those same budies.

Gasoline and distillate behave much the same in regard to alcohol, ether and their mixtures; they dissolve about 5 per cent. of alcohol at ordinary temperature, while alcohol dissolves nearly 135 per cent. of gasoline. If both are mixed in such proportions that the alcohol be more than 5 per cent, of the gasoline and less than 135 per cent., the mixture will separate by standing in two separate bodies with a sharp surface of separation. One is alcohol saturated with gasoline, and the other just the opposite. Ether behaves in a different way. It dissolves slowly and produces a slightly turbid liquid which clears after a while. By using a mixture of ether and alcohol, the turbidity is more pronounced, and finally, a small amount settles out of a liquid composed of alcohol, ether, water and gasoline. The amount separated varies with the proportion of the various components, the water content of the alcohol, and also with the temperature. In all cases the amount is small, and the separated liquid burns readily and completely, unless the alcohol used contained too much water.

At the ordinary temperature a mixture of twothirds ether and one-third alcohol dissolves about 3.06 parts of distillate, and one-half ether and onehalf alcohol only 2.36 parts of distillate or gasoline. Whenever the proportion of hydrocarbon is above that amount, the solution is not complete at the ordinary temperature and the mixture is more or less milky, but settles very rapidly. Of course, if the ether is fairly well deliydrated and mixed with alcohol of not less than 95 per cent., or 190 proof, the liquid separated at the bottom does not contain very much water and burns readily; consequently, it does no harm whatever. Using alcohol of a lower proof simply results in more water separating and collecting at the bottom of the mixing or settling vessel, whence it can be drained out.

At the close of the war the company with which the writer is connected, like many other firms, found itself not only with a large plant for the manufacture of alcohol, which could not be run to full capacity, but also with a fairly good-sized stock on hand, which it was practically impossible to reduce or to dispose of immediately. Moreover, it had a large amount of molasses in storage and contracts for a good deal more for future deliveries. Of course molasses finds a ready market and a large outlet has been found in the manufacture of stock feeds; consequently, no anxiety need be felt on that account. Still as it was not convenient to close down the distillery, an outlet had to be found for the alcohol, and its use for fuel was one of the first that presented itself and the one that seemed to hold the best promise of success.

Starting from the assumption that the price of distillate will remain comparatively low for some time to come, it seemed rational to take ordinary engine distillate, add to it the right proportion of a mixture of alcohol and ether and correct two of the main disadvantages attending the use of that hydrocarbon as an engine fuel, prevent the formation of carbon in the engine cylinders, and add a sufficient amount of low-bolling-point products to provide easy starting.

After some experiments on a small scale it was decided to try a compound of 8 parts of engine distillate, two-thirds of ether and one-third of alcohol in a six-cylinder automobile engine. The object was to find out how the fuel would act ou the engine and how it would compare with ordinary gasoline for efficiency, ease of starting and sensitiveness to control. Several runs were made, varying from 50 to 200 miles and aggregating over 1000 miles, covering all kinds of road conditions, speed and loads.

Shortly after starting on this fuel the engine began to act queerly, sputtered, and finally stopped altogether; after a short stop the engine started easily but did not respond to control and soon stopped again. On taking out the carburetor, it was found to be plugged with scale and dirt.

Also the pipe connecting the vacuum and the supply tanks was plugged. The whole feed system was thoroughly cleaned and the tank filled up again. The engine ran for about one day in a satisfactory way, then began to act queerly again. Another good cleaning was given the fuel-feed system from one end to the other, and since that time it has given no trouble.

Of course the carburetor, feed pipe and supply tank had not been cleaned since the machine was first put into commission and the dirt which had accumulated during that time was covered over with a greasy film left by the gasoline itself. So long as nothing but gasoline was used in the machine, that sediment collected undisturbed, but the alcohol loosened it and allowed it to run with the liquid and collect where it would surely call attention to its presence.

The spark plugs were practically clean all the time, showing neither carbon nor corrosion but just a small amount of loose and light soot. The pistons and cylinder heads were originally covered with hard coke, but the last time those parts were examined they were absolutely clean.

A mixture of two-thirds ether and one-third alcohol compounded with from twenty-five to forty times its volume of gaooline, was tried on a motorcycle for several days in succession with the same results. The motor started easily—much more so than with gasoline alone—gathered up speed quickly and picked up the load without any trouble. The spark plugs and the cylinders, which were coated with carbon at the beginning, were cleaned and remained bright and smooth for the rest of the trial.

From these experiments we can conclude that the addition of alcohol to the ordinary petroleum fuels prevents them from forming any carbon deposit in the engine, and insures a thorough, clean combustion. The addition of ether insures a better solution of the alcohol in the hydrocarbon. It is also a carbon preventive, and secures the necessary product of low boiling point for easy starting. At the same time both ether and alcohol have a fuel value not to be despised.

It should be remarked that the solution of alcohol and ether in gasoline or distillate behaves at distillation like a good many other mixtures of liquids of different boiling points. A true separation can be obtained only after repeated, careful rectifications. This is a distinct advantage, because the ether in its evaporation entrains a large proportion of alcohol

and hydrocarbons boiling at a higher point than ether alone, but much lower than either one of the others. Thus, a relatively small amount of ether generates a sufficient quantity of fairly low boiling product to insure a good, rich explosive mixture and easy running at a low temperature.

The next series of tests were made with benzol Most of the experiments were made with a mixture of eight parts of benzol and one part of one-third ether and two-thirds alcohol, although other proportions were tried also. An excess of ether, such as two-thirds ether and one-third alcohol in sufficient quantities to prevent coking, is not satisfactory. The engine starts very easily, but as soon as it begius to work hard, the rapid evaporation produces an enormous cooling of the carburetor, which I have seen several times covered with frost. The cousequeuce is that it is quable to pick up the load and acts as if the feed pipes were obstructed. A jacket on the carburetor does not help matters either, unless there is a special provision for cutting down the amount of fuel.

It should also be remembered that benzol dissolves the shellac coacing on the carburetor float, and the float should preferably be made of metal, or at least of a single piece of cork, and small enough to allow for a little swelling. Under these conditions, no trouble need be anticipated. The mixture of gasoline or distillate, ether and alcohol, as used in trial runs, has scarcely any effect on shellac.

As has been said before, the supply of benzol is limited, and relatively small. Unfortunately, it is not the habit of American manufacturers to save their byproducts, and material which might become very important is thrown away. It is to be hoped that the events of the last few years may teach them a mucli-needed lesson, and that in the very near future nothing will be wasted that may be put to good use. The production of benzol and alcohol can be greatly increased, and their conservation will surely prove a great boon when the supply of light petroleum begins to run low.

The manufacture of ether from alcohol is a simple matter, and to those who are accustomed to look upon ether as a rare and expensive chemical, the writer would say that it can be made for less than 10 per cent. over the cost of alcohol. There are, however, more recent and better processes for list manufacture which, by using alcohol in the vapor phase, produce very pure products with a better yield, and consequently much lower cost. The installation is simple and cheap, and the operation, which involves nothing but temperature control, is so simple that anyone of ordinary intellect can handle the apparatus.

Among those processes the two best ones only will be briefly described because they have proved their worth. The first one consists of superheating the alcohol vapor to the right temperature and then either forcing it through the debydrating bath kept at the same temperature or rejecting it in a tower filled with resisting material, over which flows the acid, also preheated. The outgoing vapors, before

condensing, are partly cooled through several heat exchanges in which the alcohol is vaporized and partly superheated. In this way the conversion of alcohol into other is much more complete. There need be no overheating, no production of permanent gases and consequent waste of alcohol; and the amount of heat necessary for the conversion is less than 10 per cent. of that in the old Barbet or Williamson apparatus. The other process consists in passing alcohol vapors, previously superheated, over alumina acting as a catalyst, also heated at that same temperature. When the time of contact is sufficient, the conversion is easily 90 to 95 per cent. and if the right temperature has been accurately maintained, there is no loss of alcohol and the vapors issuing from the converter are composed only of ether, water and a little alcohol. But if the temperature is allowed to rise to 290-300, ethylene is formed in increasing proportions, until at 300 to 400 deg. there is no ether left. The contact material must be in suitable shape so as to present as much surface as possible and not offer too much resistance to the passage of the vapors. The outgoing vapors are naturally at the same temperature as the converter. about 200 deg. C., and they are passed through a number of tubular heat exchanges, well insulated, when they give up the heat to the alcohol to be evaporated and to the alcohol vapor itself, so that the small superheater is all the necessary heating appliance.

As to cost, adding the mixture of ether alcohol to distillate, and taking ultraconservative figures of 45 cents a gallon for alcohol and 60 cents for ether, we would have:

Remember that alcohol can be made for much less than 45 cents, and that a well-built plant of large capacity can produce it usually at a profit for 25 cents, bringing the cost of ether down to about 30 or 35 cents maximum, and you will find it very easy to arrive at conclusions. Even when used as a "booster" and carbon remover, in the proportion of about 1 in 30 or 1 in 40 of gasoline, it is a paying investment.

These fuel mixtures are not to be compared with most of the carbon-removing compounds put on the market from time to time under fancy names and at high prices, some of which contain a little acetone and benzol, others benzol, naphthalene, picric acid, etc. They have a particular advantage that they render available for use in high-grade engines the less valuable petroleum products, and their manufacture can easily develop into a very important industry. Moreover, since there is little likelihood of the fuel supply exceeding the demand for a long time to come, there can hardly be any competition of the kind which is ruinous to manufacturers. On the contrary, it will open up a market for all the surplus alcohol already accumulated and utilize a large percentage of our present industrial waste.

THE COST OF MANUFACTURING ARTIFICIAL ICE

Ice Requirements for the Average Ice Cream Plant and Other Factors of Refrigeration Discussed

By J. M. Speed

District Manager, Baker Ice Machine Co., Des Moines, Iowa From an address delivered at the annual convention of the Association of Ice Cream Manufacturers of Iowa

There are few, other than those interested in the manufacture of ice cream, who have any idea of the magnitude of your business. I understand the year ending October 31, 1920, you made in lowa \$48,6755 gallons of ice cream, an average of 22155 gallons for every man, woman and child in the state, and at the same ratio there would be consumed in the United States 234,197,782 gallons last year.

Ice is a very important factor in the manufacture and marketing of the product you are so vitally interested in, for it would be next to impossible for you to do business without ice.

Figuring it requires 20 lbs. of ice to pack one gallon of ice cream (this would allow about 5 lbs. per gal. for shrinkage) there were about 54,368 tons of ice used to pack the ice cream made in Iowa last year.

I have no way of telling the total number of tons used in your industry, for so many of you have refrigerating machines for freezing and hardening and buy ice for packing. I think, however, I would be safe in stating that at least 50,000 tons were used last year for freezing and hardening by you who use ice for that purpose. This would make a total of about 104,368 tons used by you last year in the making and marketing of ice cream. (This amount, however, does not include the repacking for the retailers.) Figuring the cost of ice averaging \$5.00 per ton, you have paid \$5.21,280,000 to the ice dealers.

I have the records of an ice cream factory in this state that uses a refrigerating machine for freezing and hardening and made in July and August last year about 12,000 gallons of ice cream and lought 156 tons of ice at \$4.50 per ton, totaling \$702.00. This ice was used only for packing for shipment, and averaging 28½ pounds of ice per gallon, at a cost of \$0.585 per gallon of ice cream made during these two mouths. Understand, this cost is the cost of ice for packing for shipment only. Of this 28.5 has about 47½ per cent. was an excess over the amount actually required, for 75 pounds of ice will pack a five-gallon packer.

Take for example the manufacturer I have just referred to who made 12,000 gallons in July and August. Will say this party made a total of 50,000 gallons last year and at the same ratio of ice per gallon packed as was used for the 12,000 gallons he would have used 712% tons. The figures show that of the ice used 47½ per cent. was an excess over the actual requirement, and on 50,000 gallons would be 338.44 tons. If he could have saved 75 per cent. of this amount, which would be 254 tons at \$4.50 a ton, it would have meant a saving of \$1,143.00.

It would be a very easy matter for those of you

who have refrigerating machines for freezing and hardening to check up the amount in gallous made, the number of tons of ice required for packing, and then turn to your ice bills and find the number of tens of ice you bought for this purpose and I think I will be safe in stating you bought from 35 to 50 per cent, more ice than was actually required, and why? You call up the ice man for 1, 2, 3, 4 and 5 tons of ice-he weighs and loads it at the ice plant or ice house, hauls it through the hot sun, delivers it to you, in most cases on your packing floor, and sometimes it is there for hours and hours, that which is not used today in all probability melts before the next and your good money finds its way to the sewer in the form of ice water. If you will check this item in your own factory I have no doubt that the figures will surprise you. All of you may not have the same percentage of shrinkage but the shrinkage that you have is a big item of expense and the only way a good percentage of this expense can be overcome is to keep the ice in an insulated storage room under refrigeration at a temperature below freezing.

The shrinkage is very small when you manufacture your own ice and keep it in an ice storage room under refrigeration, for this reason. If the ice is made in 300 lb. blocks and put in the ice storage as soon as it is loosened in the freezing can, the blocks will weigh the same when taken out. Knowing a 300-lb. block of ice will pack 20 gallons of ice cream, you will take out the ice from the storage just as you use it and will save from 75 to 50 per cent. of your present strinkage.

The cost of making artificial ice depends a great deal upon local conditions. You can make artificial ice in the winter months cheaper per ton than you can in the hot summer months, for the water is colder and you have not the hot outside temperature to contend with. The refrigeration required to keep an ice storage below a freezing temperature amounts to very little. An ice storage well insulated with 4 inches of cork board on all walls, flour and ceiling, will require about 1/2 ton of refrigeration per 24 hours for each 1,000 square feet of surface, figuring the outside temperature at 90 deg. F., and the inside temperature at 28 deg. F. In other words, an ice storage 20 by 20 by 15 ft. has 2,000 square feet of surface and will require 1 ton of refrigeration per 24 hours with an average outside temperature of 90 deg. F. This size room will hold about 120 tons of ice.

The figures I am about to give you on the cost of manufacturing artificial ice I have based on 60 deg. F, water at 10c per 1,000 gallons and electricity from 1½ to 5c per kw. Electricity being available

in practically every town where ice cream is made for wholesaling and unless the rate is extremely high, I would recommend using electricity in preference to any other power because it is more convenient and does not require an experienced engineer to operate the plant. The following figures are based on requiring 50 kw. per ton of ice manufactured which is a very liberal average as I have records where ice has been made as low as 34 kw. per ton.

In locations where electric power is not available at a reasonable price 1 would recommend using a crude oil engine for power. Mauufacturers of nodern oil engines will guarantee that you can operate their engine on 72 of a pint of fuel oil per hp, hour. It will require, figuring 7½ of a pint per hp, hour, about 8 gallons of fuel oil per ton of ice, and 1 inderstand a good grade of fuel oil can be lought at about 10c per gallon, making the power cost to make ice about 80c per ton.

An ice cream factory that manufactures it own ice should have a good ice storage with a capacity of at least 45 full days or 90 one-half days' run kept under refrigeration. The plant should be operated in the winter months so the ice house would be filled before the hot season. Make the ice in February, March and April; then you will have a daily capacity during 50 days of your flush! season of 1½ times the daily capacity of your ice plant. In other words if you had an ice making unit of 10-ton daily capacity and a 450-ton ice storage, by keeping your plant in operation you would have a daily capacity in June, July and August of 15 tons, and there are few factories in this state that use more than 15 tons of ice per day for packing nurposes.

Some of your factories using machines for freezing and hardening could also make ice for packing by installing a freezing tank, cans, etc., with your present compressor capacity; others could make the necessary amount of ice by adding the ice making mit and a small compresser for 83 per cent, of the tomage is required for freezing and 17 per cent, for hardening.

Most manufacturers, making refrigerating machinery, rate the capacity of their compressors at 16 pounds suction gauge pressure, the ammonia gas expanding at zero; while there are some manufacturers who rate their compressors at 20 pounds suction gauge pressure, ammonia expanding at 5 degrees above zero.

To illustrate to you more clearly the effect the suction pressure has on the capacity of ammonia compressor, we will say you have a machine rated at 10 ton refrigerating capacity in 24 hours at 16 pounds gauge suction pressure. The same compressor operating at the same speed at the following suction pressures would be rated at the following suction pressures would be rated at the following tons of refrigeration:

In order then to keep a hardening room at a temperature from five below to five above, it is necessary to operate the compresser at five-pound suction gauge pressure. Therefore the compressor while operating at this pressure is only doing 60 per cent. of its rated capacity if the capacity was based on 16 lbs, suction pressure, losing 40 per cent. of the capacity of the compresser while you are operating on the hardening room which is only 17 per cent., of your refrigeration duty and for this reason there are some of your present refrigeration equipments that are now only doing your freezing and hardening, could also make the necessary amount of ice that you would require for packing purposes.

While the compresser is the heart of a refrigerating or ice making plant, I believe 75 per cent. of the efficiency of every plant is in the manner the low pressure or expansion sides of your plant is designed. I I believe there should be jinst as much care and thought given in designing a small plant as a large one.

N. Y. COLD STORAGE LAW AMENDED

The New York State farms and markets law in relation to cold storage was amended by the recently adjourned state legislature. The amender among other things definitely excludes ice cream from coming under the license provisions and other restrictions placed on so-called cold storage products, the word "ice cream" having been inserted in the paragraph of definitions which in its amended form reads as follows:

The term "food" as used in this article shall include any article, except nuts, fruits, cheese, vegetables, ice cream and articles in process of manufacture, preparation or cure, used for food by man or animal and every ingredient of such article.

article.

This bill, with the exception of one clause which has reference to articles of food not intended for human consumption, does not go into effect until October 1, 1921.

SUGAR PRICES IN EUROPE

Some interesting figures showing the price of refined sugar at retail in various countries at the beginning of this year are published in a recent issue of the International Sugar Journal.

The prices, the accompanying article explains, are those which have to be paid by the consumer, in the respective countries, and include all duties and taxes, and all profits of producers and middlemen.

While the figures of the International Sugar Journal show the prices in the currency of the respective countries, these have heen converted into dollars and cents, and bring out strikingly the fact that in some countries, notably Poland, Czecho-Slovakia, and Germany, the home currency has not lost its purchasing power to the same extent in the country of origin as it has in the world market.

The prices are as follows in cents per pound at recent exchange rates: Austria, 9.38; Belgium, 10; Czecho-Słovakia, 4.5; Finland, 25.3; France, 11.35; Germany, 5.75; Hungary, 11.3; Italy, 14; Netherlands, 11.5; Norway, 14.6; Poland, 3.81; Spain, 18.23,

THE ICE CREAM TRADE JOURNAL

A practical helper for Ice Cream Manufacturers and a chronicle of trade events.

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THOMAS D. CUTLER
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THE NATIONAL ASSOCIATION OF IC CRAIM MANUFACTURES. THE ARROCATION OF IC CRAIM MANUFACTURES. THE ARROCATION OF IC CRAIM MANUFACTURES. THE ARRO, OF ICE CRAIM MATURACTURES. ON Y. Y. STAVE. THE ARRO, OF ICE CRAIM MATURACTURES. OF THE ARROCATION OF ICE CRAIM MANUFACTURES OF MANUFACTURES. THE ARROCATION OF ICE CRAIM MANUFACTURES. THE ARROCATION OF ICE CRAIM MANUFACTURES. THE OTHER MANUFACTURES. THE OTHER MANUFACTURES. CRAIM MANUFACTURES. THE OTHER MANUFACTURES.

Remitiance should be by check or draft or money order, made payable to Thomas D. Cuiler, or by currency in registered letter. Currency sent in unregistered letter will be at the sender's risk.

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New Figures

The ice cream figures in the production report of manufactured dairy products for 1920 by the Bureau of Markets, Dairy Division, U. S. Department of Agriculture, throw an interesting light on the peaks and valleys of the ice cream business and, when contrasted with the commonly accepted facts as to conditions existing only a few years ago, show a gratifying proportionation increase in production for the low amonths.

The new figures show that in 1920 the production in June, July and August was 46 per cent, of the year's total, whereas investigations made from three to five years ago showed that in general 60 per cent. of the production was made in the same three months. The production relation between high and low months used to be as 10 or 12 or more is to 1; the present relation, as shown by these new figures, is just over 5½ to 1—a showing that we daresay will astonish many manufacturers who have thought that effort and money expended on an attempt to increase the proportion of winter business would be wasted.

It is fair to assume that the bureau's figures, based on reports from 2,427 factories, are in reasonably true proportion to the actual production of the whole number of factories in the country, and therefore afford a fairly sound basis for estimating total production. The total number of factories, according to the records of The ICE CREAM TRANE JOURNAL, is just over four thousand, or five existing to three making the reports from which the bureau's figures were compiled. So if the bureau's total production figure of 140,033,141 gallons is increased as 5 is to 3, we get a total of 234,888,570 gallons, which is, to say the least, a striking confirmation of This JOURNAL's estimate of 230 million gallons—an estimate that has never been offered to anyone as anything more than a crude estimate.

Cocoanut Oil Interests Seek Governor Edwards of New Jersey has disapproved the ice cream bill fathered by the State Board of Ilealth and there is joy in the

Dumping Ground Health and there is joy in the camp of the cocoanut oil interests.

The original bill, drafted after the leading ice cream men of New Jersey and shippers from nearly states had been called into conference, fixed a butter fat standard of eight per cent. for plain ice cream and six per cent. for fruit and nut ice cream. In the Senate it was amended to allow substitution in part of cocoanut oil for butter fat and passed in that form.

When the Health Board learned what had hanpened to its bill it got busy to such purpose that the bill was recalled by the Senate. The Senate Committee to which the bill was referred granted a public hearing on it and at the hearing the plea of the State Board of Health for it original bill was strongly backed up by local health officers, ice cream manufacturers and milk producers and by speakers appearing in the interest of consumers. Representatives of the cocoanut oil interests made bitter attacks on ice cream, charged that all big ice cream men were members of a milk trust, and claimed that enactment of the amended bill, allowing the use of cocoanut oil, would not only save their business but would actually benefit the smaller manufacturers of ice cream and the public as well.

In due course the original bill, barring cocoanuoil, was passed by both branches of the Legislature. Governor Edwards sent it to the morgue, saying: "I am unable to approve of this measure for the reason that I regard it as an unwarranted interference with established business. It seems to me too drastic."

As a matter of fact, the bill was mild in comparison with the definition and standard approved by the National Association of Ice Cream Manufacturers, and in the form in which it was presented to Governor Edwards it had the approval of all the leading New Jersey ice cream manufacturers and of the large shippers affected by it. If any ice cream manufacturers, however, small or large, were opposed to it, they did not appear before the Senate Committee to say so—either with the representatives of the cocoannt oil interest or independently.

We do not accuse Governor Edwards of had faith. We merely point out that he misunderstood the situation. And this we do mainly to emphasize the need for watehfulness even after the cocoanut oil group is apparently defeated. If the ice cream industry is to save itself from being made a dumping ground for eccoanut oil, there must be alert, active and persistent opposition to the determined efforts being made to that end.

The National Association has again declared its opposition to the nee of coconnut oil and other so-called foreign fats and has issued a warning to its members. But the cocoaint oil interests gained a left-handed victory in New Jersey in spite of the efforts of members of the National Association, and after their defeat seemed certain. So we repeat that opposition to the determined purpose of the cocoanut oil interests must be persistent as well as alert and active: and it will be well to look for danger where it is least expected to develop.

CORRESPONDENCE

Wants Ice Cream Factory

Editor THE ICE CREAM TRADE JOURNAL:

We will appreciate very much if you will send us a copy of your publication. We are very much interested to have an ice cream factory established here and we have an unusual opportunity for a man who understands this business and has the capital.

Yours very truly,

H. B. Branch, Secretary, Cliester Chamber of Commerce. Cliester, S. C., May 6,

PRICES FALL IN APRIL

Dun's index number of average commodity prices, computed on the average per capita consumption basis of the separate articles, shows as of May 1 a decline of 4.4 per cent. from April 1, as compared with a decline of 41 per cent. in March; 2.1 in February, and 6.4 in January. The May index number marks the lowest ppint touched in the Dun computations since Nov. 1, 1916; the decline from the high level of May 1, 1920, being 367 per cent. But the present index number is still nearly 40 per cent. above the pre-war basis.

NATIONAL DAIRY SHOW

The exhibit space for machinery and farm and barn equipment and supplies for the 1921 National Dairy Show, to be held on the Minnesota Fair Grounds, October 8 to 15, next, was offered to the regular line of exhibitors at a called meeting for the purpose, held in April, and a new first day space sale record was made.

The building in which the machinery part of the show is to be placed, is the new cartle barn of its SS00,000,000. It is about the best real show building the dairy show has ever had offered for its use; constructed of brick and steel, concrete floor, and equipped for brilliant day and night lighting. The building is 400 by 235 ft. in which the only obstructions are small steel posts to carry the trusses supporting the roof of the mezzanine floor, leaving the center of the building entirely clear. The mezzanine floor is 34 ft. in width, encircling the room, making the space on this floor as attractive and of equal show value as the ground floor.

Eighty per cent. of the total show space was purchased at the sale and five per cent. has been taken since, making the greatest sale of exhibit space in the same period of time that the show has ever enjoyed.

This enthusiastic support of the show on its northworst pilgrimage, plus the unprecedented interest of the people of the whole Northwest, Northern and Western States, over the coming of the show to that section, surely can be interpreted as meaning that the greatest National Dairy Show will be held on the Minnestol Fair Grounds, between St. Paul and Minneapolis, this year—October 8 to 15, inclusive.—National Dairy Ass'n.

N.DAK. ADOPTS HIGHER STANDARD

By an order issued December 28, 1917, the Food Commissioner of North Dakota reduced the state icc cream standard from 14 per cent. to 10 per cent. for plain icc cream and from 12 per cent. to 8 per cent. for futi and nut ice cream. A shortage of dairy products during the war was given as the purpose of this reduction.

It is reported that after June 1, 1921, the following new regulation goes into effect raising the state standard to 12 per cent. for plain iee cream and 10 per cent. for fruit and nut ice cream:

Ice Cream is a frozen product made from cream and sugar, with or without natural flavoring, and contains not less than 12 per cent. of milk fat. Fruit ice cream is a frozen product made from

cream, sugar and sound, clean and pure fruits, and contains not less than 10 per cent, of milk fat.

Nut ice cream is a frozen prdnet made from cream and sugar and sound, non-rancid nuts, and contains

not less than 10 per cent, of milk fat. Gelatine ice cream is a frozen product made from cream and sugar, with or without natural flavoring, and contains not less than 12 per cent, of milk fat and not more than four ounces of pure gelatin for each 10 gallons.

Gum ice cream is a frozen product made from cream and sugar, with or without a natural flavoring, containing not less than 12 per cent. of milk fat, to which has been added a small quantity of gum powder from starch or other eercals, and free from any harmful ingredients or foreign color.

MILK PRODUCTION COSTS

What is the cost of milk production?

This is the question that has brought increasing concern to each dairyman. In answer to it, the United States Department of Agriculture, through the Dairy Division, conducted a series of studies to give dairymen reliable information on this subject. These studies were begun in 1915, but the most recent upon which any data have been published was begun in 1917, in Skagit County, Washington, about 70 miles north of Seattle. The report of this study is contained in Department Bulletin 919, Unit Requirements for Producing Milk in Western Washington.

A study of the results given in the bulletin shows that at the time of the study 56.4 per cent, of the total cost of producing milk at the dairies investigated was for feed and bedding; 23.5 per cent for labor; 17.6 per cent, for other costs; and 2.5 per cent, for depreciation. The requirements for producing 100 pounds of milk during the winter were: Concentrates, 29.4 pounds; dry roughage, 9.29 pounds; succulent roughage, 14.3 pounds; bedding, 9 pounds; human labor, 19 hours; horse labor, 0.1 of an hour; other costs, 9.576. During the summer milk could be produced at much less cost, there being required a comparatively small amount of concentrates.

During the two years covered by the study, 44.5 per cent, of each year's income from milk was obtained during the winter. During the first year records were obtained on 17 herds having an average size of 31.3 cows, with an average annual production of 7,369 pounds of 3.74 per cent, milk per cow, During the second year 18 herds, 15 of which had been in the first year's work, had an average size of 28.6 cows and produced an average of 8,323 pounds of 3,59 per cent, milk per cow. From each 100 cows in the herds during the two years, 55 freshened during the winter six-months period, and 42 during the summer season, while three cows did not calve during the Nearly one-half of the cows freshening dropped their calves during the months from February to May, inclusive,

Most of the milk in this section is sold for condensing purposes, and is delivered by motor truck to large milk condenseries. All the herds selected for study were representative of dairy conditions found in that section. It is the custom to hire milkers, who milk and take care of 25 to 30 cows per man and give their entire time to the herd.

In western Washington the pasture plays a very important part in milk production, according to the bulletin. With cool weather throughout most of the summer, plenty of moisture, and a rich soil, there is abundant pasture until late in the fall. During the pasture season almost 60 per cent. of the milk for the year was produced and at one-third of the yearly feed, belding, and pasture cost. The annual pasture charge per cow amounted to 1.1 acres of \$23.04. Such items as veterinary fees, medicine, disinfectants, and other items amounted to \$1.45 per cow per year. It was found that the number of hours required to care for a cow did not differ materially between the summer and winter seasons. However, due to the increased flow of milk in summer, the

time required to produce 100 pounds of milk in that season was materially less in summer than in winter.

MICHIGAN DAIRY STATISTICS

The following statistics estimating the amount and distribution of milk produced in Michigan for 1920 was recently issued along with bulletin No. 15 of the Michigan Allied Dairy Association:

Milk produced by the 873,000 cows in Michigan for pounds per cow was distributed as given below, as-pounds per cow was distributed as given below, as-pound of butter, 10 lbs. for a pound whole milk for a pound of butter, 10 lbs. for a gallon of jet cream. In milk for direct consumption it was assumed that the average for all classes was 1 lbs. per capita per day. That 80 per cent. of the milk cows had calves that on the average consumed 200 lbs. of whole milk, and that the losses on farms, in transportation and in factories was 2 per cent. of the total milk produced;

produced:		
Total milk produced	Pounds 3,492,000,000	Average Value \$104,760,000.00
Lbs. milk in creamery butter	945,000,000	28,350,000.00
Lbs. milk in dairy butter		18,042,881.19
Lbs. milk in cheese	25,513,330	765,399.90
Lbs. milk in coml., evap. and		
powd. milk	393,865,K37	11.815.975.11
Lbs. milk in ice cream		1,159,643.80
Lbs. milk for direct con-		
sumption	t.277,500,000	38.325,000.00
Lbs. milk fed to calves	140,000,000	4,200,000.00
Losses on farms and in factories	69,840,000	2,095,200.00

The total amount of ice crean manufactured in Michigan is estimated as 6,885,146 gallons to which a wholesale value of \$8,600,442.50 is given.

INDIA'S SUGAR CANE CROP

The final general memorandum of the Department of Statistics, India, on the sugar cane crop of 1920-21, based upon the reports received from Provinces containing about 99 per cent. of the area in British India under sugar cane, estimated the area sown at 2,553,000 acres, a decrease of 5 per cent. from the estimated acreage of last year, and a total yield of raw sugar at 2,465,000 tons as against the estimated of 3036,000 tons last year. The estimated shrinkage in the yield of 19 per cent. is primarily due to droughts during November and December in the United Provinces, Punjals, Balir, and Orissa, which include practically 90 per cent. of the sugar cane area of India.

MILK SURPLUS REPORTED

For the first time since the beginning of the World War there is developing in this country a surplus of milk, according to reports recently received by the United States Department of Agriculture. Specialist of the department state that this condition, probably will be only temporary during the "flush" of the season, and that it is most apparent in well-developed dairy districts.

It may continue during the summer months, but is expected to adjust itself by fall, when demand will overtake the surplus of supply. The situation is largely due to the falling off in the demand for milk in the maunfacture of condensed products, milk powders, casein, and similar products, for which there was a large export outlet.

QUERIES REPLIES COMMENTS

Formal Openings

What is the customary program to follow in opening up a new ice cream factory to the public? We are planning to have some sort of grand opening. S. E. C. in opening

There have been any number of successful formal openings of ice cream plants and no set rule is followed because of the varying conditions in different cities. If the city is not too large the general public can be admitted all during the opening, while sometimes it is best to confine formal openings "by invitation only."

Sometimes the formal opening is extended over a number of days and different delegations are received by the management and shown through the plant. For instance, the Mayor of the city and his staff might head the list and, surrounded by the proper settings, start the plant in operation. Another day can be set aside for the different ladies societies of the city, another for the school teachers, bringing their classes, and so on. One day can be made "dealer's day" and a convention of the dealers held in your new plant.

It has been found that before issuing invitations to any organization it is best to consult the heads of the organization and get their consent, thus eliminating the chance for any part of your reception falling flat. For instance, if you wish the school teachers to bring their pupils to the opening get the consent of the School Board first.

The formal opening should be well advertised. In some cases it is held in conjunction with some advertising scheme, the climax of which eulminates on · the opening night or week.

The main object of the formal opening is creating good-will for your ice cream and your firm. This is done by showing the consumers and prospective consumers of your ice cream how it is made and leaving the impression on those who attend the formal opening that your ice cream is made in an up-todate, sanitary plant. For this reason it is best not to hold your formal opening until you are sure that everything is complete.

Shrinkage In Ice Cream

Can you tell me what will cause falling in ice cream having 9 per cent, fat, 35 per cent, total solids with an overtim of, 100 per cent, 2. This cream falls after leaving the hardening rooms. Would the use of beel sugar have my influence.

We see no reason why the use of beet sugar would have any influence or be the cause of your ice cream falling in the can.

You state that the shrinkage appears after the ice cream leaves the hardening rooms. Nevertheless some manufacturers have found that sometimes their ice cream is apparently hardened and at the same time was improperly hardened, in that, within the body of the icc cream (not showing on the top) large cracks or cavities were formed. It is obvious that if this condition existed the settling would be relatively rapid, amounting almost to a collapse, as soon as allowed to soften or was jarred about in the packer.

This defect is attributed to high temperatures in the hardening room causing the ice cream to harden too slowly.

If you are still having this trouble take a can or two out of the hardening room and dip or unmould as you would a brick slab and cut the block lengthwise. If this defect is present you will find big cracks or possibly even a large cavity some distance down from the top.

However, if after making this test you find your iee cream has been properly hardened then your trouble no doubt is caused by improper packing. Too often not enough salt is mixed with the ice in packing. Some manufacturers have found it necessary to use as much as a one to seven by weight of salt and ice in packing, especially when shipping in the summer time.

There is no ingredient that can be properly added to keep ice cream from melting. On the other hand, as the overrun increases the reserve of refrigeration decreases. And in your case, even though you are freezing a mix with apparently sufficient solids for a 100 per cent, swell, nevertheless the tendency to falling should be decreased if you were freezing at a lower overrun.

Condensed Skim and Condensed Whole Compared

conditioned and described when the complete con-trol of the condition of

We assume that you refer to unsweetened condensed skimmed milk and unsweetened condensed whole milk. The main difference between these two products is that the former has the butter fat removed before it is condensed while the latter is the unskimmed milk condensed.

There are different concentrations in condensing milk. However the following two are in general use. The average composition of unsweetened condensed whole milk, 21/2 in one, is:

The average composition of condensed skim milk,

An inspection of the above compositions will show you the difference between the two products.

Now as to replacing 40 gallons of condensed skim milk in your mix with condensed whole milk, it is a question as to what you want in the way of butter fat and milk solids not fat in your finished product. Condensed whole milk contains 27 per cent. total milk solids, 8.3 per cent. of which is butter fat, while con-

densed skimmed milk contains 34.5 per cent. total milk solids, 0.7 per cent, of which is fat,

Your 40 gallons of condensed skimmed milk, if 4 in one concentration, should weigh about 381.6 lbs. (9.54 lbs, per gal.) and contains 2.67 lbs, of butter fat and 128. 98 lbs, of milk s.n.f.

It will be impossible to replace in the same proportion both the butter fat and milk s.n.f. by using the condensed whole milk instead of condensed skimmed mitk

To replace the 2.67 lbs, of butter fat in the skimmed condensed will require 32.17 lbs of whole condensed having 2.67 lbs, butter fat and 6.01 lbs, milk solids not

To replace the 128.98 lbs. of milk s.n.f. in the skimmed condensed will require 689.73 lbs. of whole condensed having 128.98 lbs. of milk s.n.f. and 57.24 lbs. of butter fat.

It is obvious that to balance both the butter fat and milk solids not fat when replacing condensed skimmed milk with condensed whole milk it will be necessary to use some other milk product, that is, you can cut back with skim milk or skim milk powder if the butter fat is too high or cut back with butter if the milk solids not fat is too high.

A Formula Using Corn Sugar

In the article on corn sugar in the November. 1919, issue of Time I ce Caran Taxor Journal, there is a formula which I can you give me one along the same lines to contain 14 per cent. I fat and not exceeding 2 per cent. of gelaline, as those are our state limits?

The following formula covers the requirements, name 14 per cent, butter fat and 2 per cent, galatine content:

Cream 20% Fat— 7.5% S.N.F. Cond. Milk 8% Fat—20 % S.N.F. Cane Sugar Corn Sugar Gelatine Solution (10% Gelatine Solid) Flavor

3.5 lbs. 2.0 lbs. .5 lbs.

100.0 lbs. Complete Mix

The above formula contains 14.12 per cent, fat, 8.52 milk solids not fat, 12 per cent, cane sugar and 3.5 per cent. corn sugar, .2 per cent. gelatine solid.

OUR REAL LABOR PROBLEM

"Modern civilization is going to rise or fall, not in the schools, not in the churches, not in our political institutions, but in the industrial and economic relations between man and man," said Dr. Charles A. Eaton, in a recent address before the Chicago Association of Commerce. He continues:

Today the man who owns a factory is a nation builder, and, unless he is bigger than his business, he is not big enough for his business.

When capital ceased to be a personal thing and organized into vast, impersonal trusts, it forced labor The old also to organize into a large impersonal mass. relationship between employer and employee was lost and the result was two large, impersonal bodies lined up against each other and at war.

It is necessary to find something to substitute for this war. What is needed is leadership, and the leadership labor needs is the leadership of the man who employs him. The ordinary man would rather follow his big boss than anyone else. When the big boss failed to supply the proper leadership, outside leaders came to deliver the working people from the oppression of the big boss. Now is the time for managers to heat the professional deliverer and solve the labor problem by being the deliverers themselves

I am opposed to the closed shop because I think it is un-American and contrary to our Constitution. But don't fight for the open shop unless you can pay the price. Do not substitute one tyranny for another. You can pay it. It could be paid today, and if that price is laid down today and followed up we will have an era of peace and cooperation, the like of which we have never known in this country.

SOUTH DAKOTA MEETING

The ice cream manufacturers of South Dakota held a short business meeting at Huron on Friday, April 29. At this meeting they completed their organization by adopting a constitution and by-laws and electing officers for the ensuing year.

The name adopted was the Ice Cream Manufacturers Association of South Dakota, and according to the constitution any person, firm or corporation engaged in the wholesale manufacture of ice cream in the state is eligible to active membership. Associate memberships were also provided for. An annual fee of \$5.00 was adopted and the gallonage assessment left to be decided by the executive committee.

The officers of the association consist of a president, vice president, secretary, treasurer and five directors, all of whom constitute the executive committee.

The following men were elected: President, G. H. Gould, Sioux Falls; vice president, W. G. Arlt, Rapid City; secretary, E. E. Skoug, Sioux Falls, treasurer, C. Rognes, Madison, and directors: E. A. Binder. Yankton; I. J. Bibby, Brookings, W. G. Gagnon, Huron: C. G. Hopkins, Redfield, and E. E. Thompson. Mitchell.

NEBRASKA STANDARD

Recent efforts in Nebraska to reduce the state ice cream standard from 14 per cent, butter fat to 10 per cent, were in part, unsuccessful. After considerable juggling of this bill by both branches of the State Legislature it was passed by the House and the Senate in an amended form. The amendment provides that 14 per cent, butter fat ice cream shall be sold in Nebraska but that ice cream manufactured in the State for consumption in neighboring states does not need to comply with the 14 per cent, requirement. If approved and signed by the Governor the State will have a double standard, allowing the manufacturer to make ice cream conforming with the standard of the State in which it is shipped

ACCOUNTANTS CONVENTION

The preliminary program of the annual convention of the National Association of Cost Accountants which is to be held in Cleveland on September 14, 15 and 16 next, has just been issued. It provides for three days of conferences on practical cost questions including "Interest as an Element of Cost," "Cost Systems as a Means of Preventing Waste," "Uniform Methods and Standardized Costs," "Executive Use of a Cost System," and a number of similar topics. It is expected that upwards of one thousand cost men will take part in these conferences. Stuart C. McLeod is secretary of the Association with headquarters at 130 W. 42d st., New York, N. Y.

NEWS OF ICE CREAM FACTORIES

Readers are requested to send for this department authentic news of intention to build, improve or add equipment to plants; changes in control, and other items of interest about plants and the business.

ALABAM A

Mobile—An ice cream factory is being established by the Albright & Wood Drug Co. The equipment, which is all furnished by the Creamery Package Mig. Co., includes a 12-ton C.P. vertical refrigerating outfit with 2-ton ice making equipment, Manton-Gaulin homogenizer, Fort Atkinson freezers, Wizard porcelain pasteurizer and Alaska tubular cooler.

ARIZONA

Mesa—The Mesa Ice Cream Co. has been organized by E. Bosstick and D. W. Rogers. The company is building a new plant with a capacity of 600 gal, per day.

Phoenix—James Ballin is reported to be opening an ice cream plant here.

CALIFORNIA

facture candy and ice cream.

Jackson—John Strohm and William Krabbenhoft are reported to be planning to convert a brewery on Sutton stating an ice cream plant.

Sutton st., into an ice cream plant.

Marysville—The Culmsee Candy Co. has been incorporated with a capital stock of \$50,000 to manu-

Oakland—The Fiesta Ice Cream Co., 3658 Broadway, has been incorporated with a capital stock of \$250,000 under the laws of the state of Delaware. The articles were prepared by Fitzgerald, Abbott & Breadsley of Oakland. The officers of the company are: President and Manager, George Goehler; Vice-President, C. Day and Sec.-Treas., G. Foster. San Diego—The San Diego Creamery is installing.

an ice cream plant in its dairy establishment. Visalia-The Benham Ice Cream Co. of Fresno,

has arranged to open a branch here.

Denver—The Philip Zang Co., 618 Water st., has been organized by The Philip Zang Brewing Co. to manufacture ice cream on a large scale.

CONNECTICET
Stamford—The Huber Ice Cream Co., of Bridgeport, recently established a distributing station here,
crecting a one-story brick building, 40 by 100 ft.,
consisting of a garage, office, shipping room, ice
storage, 8 by 16 ft., and two hardening and operated
by an 8-ton Creamery Package compressor.

FLORIDA

Eustis-W. O. Johnson, of Chicago, Ill., recently established an ice cream plant here.

Jacksonville—James I. Roney, 751 Lemon st., contemplates erecting an ice and ice cream factory here. Miami—W. J. Brown, of Elizabethtown, Ky., plans to establish an ice cream plant here.

ILLINOIS

Aledo-C. E. Sinclair, of the Sinclair Ice Cream

Co., of Galesburg, has taken over the Zales McGinnis Bottling Works and is converting it into an ice cream factory. Modern equipment is being installed including a 7-ton Baker refrigerating machine installed by the Burge Machine Works with hardening 100ms, sweet cream room and ice making equipment. Mr. Sinclair says that he will continue the bottling business of the Zales McGinnis Co.

Aurora—The Aurora Ice Cream Co. has added to its refrigerating equipment one 25-ton York vertical single-acting belt driven enclosed refrigerating machine and high pressure side complete, also a 5-ton machine of the same type.

Austin-The National Ice Cream Co. contemplates enlarging its plant and installing additional machinery.

Charleston—The Boyer Ice Cream Co. recently completed improvements in its plant including a refrigerating outfit to take care of 600 gallons of ice cream a day.

Chicago—The United Consumers & Producers of America is reported to be erecting a large ice cream plant at 3500 S. State st.

Chicago—The Columbia Ice & Ice Cream Co., Kedzie ave. and Filmore st., recently installed new refrigerating equipment including a 100-ton and a 75-ton vertical single acting high speed semi-enclosed refrigerating machine, each with direct motor mounting and condensing side including flooded atmospheric ammonia condensers, also a 100-ton York improved raw water freezing system, together with an extra 400-lb. automatic can dump.

Chicago-The Lawrence Ice Cream Co., 937 W. 21st st., is rebuilding its plant at a cost of approximately one-quarter of a million dollars. When completed it will have a capacity of two million gallons annually, double the amount of its former capacity. The refrigerating capacity of the plant also has been increased 100 per cent, giving a daily capacity of 200 tons of refrigeration and 60 tons of ice. The company states that its fleet of fifteen White trucks and five Walker electric trucks recently was equipped with specially designed bodies with a capacity of 600 gallons patented by L. B. Olin. The ice does not come in contact with the ice cream, a separate compartment being provided to carry it. The company also has had new brick ice cream cabinets designed by Mr. Olin, the fundamental principles underlying the construction of the truck bodies and the cabinets being the same.

Freeport—The Stephenson County Cooperative Marketing Co. plans to establish a new plant for manufacturing ice cream and butter.

Freeport—S. Dittmar is reported to have opened an ice cream plant on Washington and Van Buren sts.

Hammond—The Consumers Ice Cream Co. was recently incorporated with a capital stock of \$10,000 by J. B. Bereolos, J. C. Dickson, A. J. Swanson and others.

Moline—A. M. Wenholz, of Aurora, has purchased the business and plant of the Blue Ribbon Ice Cream Co. Rockford—The Spatz-Barrett Ice Cream Corecutly incorporated by Charles Spatz and J. C. Barrett has opened a new plant at W. State st. and Kilburn ave. The new factory, 50 by 60 ft., has a capacity of 4,000 gal. daily and is equipped with modern machinery, including two Baker refrigerating machines. The daily ice freezing capacity of the new plant is 8 tons with a storage capacity of 75 tons.

Waterloo—C. H. Manverse is reported to have taken over the Waterloo Condensed Milk Co., in which he will manufacture ice cream on a large scale.

Waukegan—The new directors of the Dolen-Broecker Co., recently announced that hereafter the company will be known as the Durkin Ice Cream Co.

INDIANA

Decatur—The Conter Ice Cream Co. recently leased a two-story brick building on Second st., which it is remodeling into an up-to-date ice cream plant. A modern refrigerating plant will be included in its equipment.

Fort Wayne—The Fort Wayne Dairy Co. was recently reorganized with the following officers: President, J. C. Hutzell; secretary, D. J. Ziegler; treasurer, C. Spanley and general manager, W. H. Collins, Entirely new machinery, both dairy and ice cream, is being installed in the company's plant,

Lafayette—The Chamberlain Ice Cream Co. contemplates the erection of a new factory this coming fall.

Marion—The Amboy Creamery Co. has purchased a building at Third and D sts., which is being converted into a modern (ice cream plant. This factory, according to G. M. Yoars, president of the company, will be the company's main plant taking the place of the one in Amboy which was destroyed by fire. New equipment will include a 15-ton York refrigerating machine.

Richmond—C. T. Price & Sons recently built a three-story addition to its present three-story plant and is installing a 10-ton Creamery Package refrigerating machine. A hardening room of 1200 gal. capacity, cream room and cold storage is being installed by the Armstrong Cork & Insulation Co. New machinery is being installed including a mixer furnished by Bessire & Co., a viscolizer and Miller brine freezers.

Terre Haute—The Olympian Ice Cream & Candy Co. has installed a 4-ton Brecht refrigerating machine.

IOW A

Sioux City—The Fairmont Creamery Co. is now operating in its new \$1,000,000 plant here. It is a combination of butter, ice cream, poultry and cold storage plant. The very latest of machinery has been installed including four Miller freezers of the large type, ice cream ripening vats of 4,000 gal. capacity and hardening rooms capable of holding 30,000 gal. of ice cream. The plant is equipped to manufacture 100,000 lbs. of butter and has storage capacity for 3,000,000 lbs. of butter and has storage capacity for 3,000,000 lbs. of butter and place,0000 doz.

of eggs. A 250-ton refrigerating outfit supplies the plant with refrigeration.

Spencer—B. M. Graham has sold part of his interest in the Northwest Ice Cream Co. of R. E. Clemons of Waterloo, who will take an active interest in the business.

SANCA.

Holton—John Garber has purchased the ice cream equipment of the Holton Creamery Co, which he is converting into a plant for the wholesale manufacture of ice cream. Mr. Garber has changed the name of the firm to The Garber Ice Cream Factory.

Junction City—The Deluxe Candy Shop, W. 7th st., is reported to be planning to manufacture ice cream for the wholesale trade.

KENTUCKY

Central City-Leo Fentress plans to establish an ice cream plant here.

Lexington—The Sanitary Milk Products Co. recently purchased a building which is being converted into an ice cream factory. When alterations are finished the company will move its present equipment into the remodeled building.

MAINE

Bath—The Kerrigan Ice Cream Co. has been organized and is installing a plant in a building on Commercial st.

Island Falls—The Eureka Ice Cream Co, recentyorganized by Messrs. Spratt & Webb, has purchased the ice cream plant of R. A. Sanborn which will be improved and equipped for the wholesale manufacture of ice cream.

MARYLAND

Baltimore—The Superior Ice Cream Co., 233 S. Regester st., has been incorporated with a capital stock of \$50,000 by W. S. Gorsuch, Jos. A. Burkhardt and Raymond H. Bozman.

Baltimore—The Hendler Creamery Co., 1100 Block E. Baltimore st., has increased its capital stock from \$160,000 to \$460,000. The company recently enlarged its plant.

Baltimore—A. Holt, Inc., has been organized with a capital stock of \$50,000 by A. Holt, J. Leroy Chase and W. D. Macmillan. The new company will manufacture and deal in ice cream, confectionery, etc.

Hagerstown—The Hershey Creamery Co. has added one 15-ton Frick belt-driven, enclosed refrigerating machine and a complete hardening room with ante room to its ice cream plant; all material being furnished by the Frick Co. These improvements amount to about \$15,000 and will give the plant a capacity of 2,000 gal. per day.

Mount Airy—The Mount Airy Ice Cream Co. has been incorporated with a capital stock of \$30,000 with the following officers: President, Walter R. Rudy; secretary-treasurer, A. R. Molesworth and manager, C. C. Riddlemoser. In addition to its 12-ton ice plant the company is building an ice cream plant. The new plant will contain a hardening room, 36 by 40 ft, and modern machinery installed by the Cherry-Bassett Co. The new factory will be ready for operation about May 25.

Salisbury-The Horn Ice Cream Co., 1133-59 Low

st., Baltimore, Md., is building a cold storage room in the plant of the Messick Ice Co., which the Horn Company will use in connection with its distributing station here.

MASSACHUSETTS

Beverly--II. P. Hood & Sons, of Boston, have purchased the business of the North Shore Creamery Co. at 98 Park st.

Chelsea—The T. G. Hancock Co., 14-20 Woodlawn ave., has added an ice cream department to its milk plant. Modern machinery is being installed by the J. G. Cherry Co.

Leominster-The Wheaton Ice Cream Co. has opened a small factory here.

Lynn-H. P. Hood & Sons, of Boston, has taken over the Boston Ice Cream Co. of Lynn.

Worcester-Kalashian Bros, recently added a 10ton refrigerating machine and water cooling tower to its ice cream plant.

Worcester—The General Trading Co. has completed its new plant which has a capacity of 3,000 gal. of ice cream. The new equipment installed includes a 20-ton Creamery Package refrigerating machine, two 80-qt. freeers and rotary can washer. The hardening room of 4,000-gal. capacity was installed by Junius Stone Corp., New York, N. Y.

MICHIGAN

Coldwater—Amaden & Son is reported to have purchased the ice cream business of Olmstead & Brown.

Grand Haven—The Piper Ice Cream Co., of Muskegon, is reported to have purchased the wholesale ice cream manufacturing business of Peter De

Muskegon—The Piper Ice Cream Co. has installed a 15-ton vertical single-acting belt-driven, enclosed refrigerating machine and high pressure side complete.

Saginaw—The Freeman Dairy Co. of Flint, Mich., is reported to be planning to build an ice cream plant here.

MANNESOTA

Rochester-W. L. Parkin is installing in his ice cream plant a 10-ton York refrigerating machine,

MISSISSIPPI

Crystal Springs—The Crystal Springs Ice Cream Co. has been incorporated with a capital stock of \$60,000 by G. W. Chambers and others.

Holly Springs-The McLarn Ice Cream Co. of Tupalo, Miss., is installing an ice cream plant here,

Moorehead—The Delta Ice & Ice Cream Co. recently installed new refrigerating equipment furnished by Frick Co.

Yazoo City—The Exchange Drug Co. has made considerable improvements in its ice cream plant installing new machinery including a new 4-ton Creamery Package vertical refrigerating machine.

MISSOURE

Kansas City--Clark F. Atwood contemplates the erection of a \$5,000 ice cream plant at 628 Reynolds ave.

Louisiana—The Weber Ice Cream Co. has installed a 12-ton vertical single-acting belt-driven enclosed refrigerating machine and high pressure side complete.

NEBRASKA

Hastings—The K-B Ice Cream Co., at 118 S. Burlington ave., has been organized by George H. Coon and Earl D. Bruce. The new firm is operating in a new factory with a daily capacity of 700 gal.

NEW TERSEY

Guttenburg-Friedauer Bros., 35 Adams st., is installing new equipment including Emery Thompson freezers, mixer and other equipment.

Holokem—The Keystone Dairy Co, expects to have its ice cream department in full operation about June 1. The ice cream plant, which was installed by K. W. Schantz, Inc., includes two 30-ton York motor-driven compressors, a 20-ton ice tank, eight 40-qt, freezers, 400-gal, homogenizer, two 1000-gal, galass-lined holding vats, one 600-gal. Wirard vat and two 400-gal, pasteurizing vats. The daily capacity of the new plant is 4,000 gal, with a hardening room capacity of 15000 gal.

NEW YORK

Corning—The Corning Ice Cream Co. has been incorporated with a capital stock of \$20,100 by W. F. Mann and E. E. Schmick. The new firm is equiping a new two-story plant with modern machinery including two 40-qt. brine freezers, one viscolizer, one pasteurizer and a 4-ton Brunswick refrigerating outfit with a hardening room of 500 gal. canacity.

East Patchogue—L. W. Smith has purchased from his father, A. F. Smith, his interest in the Smith's Ice Cream Works and the business will be continued under the same firm name by L. W. Smith with Edward Myslivecek. The company recently made improvements in its plan including the installation of a new 12-ton Wittenmeir CO₂ refrigerating plant.

Foughkeepsie—A. G. Papastrat & Co., 400 Main st, has remodeled its entire plant adding a new 1,000gal. hardening room and installing new machinery including a Miller freezer, and two Plaudler mixing tanks of 500 gal. capacity each. The company recently purchased two new one-ton trucks with packing bodies.

Scotia-The Gage Ice Cream Co., 134 Mohawk ave., has changed its name to the Colonial Ice Cream

Syracuse—May & McCarthy have been incorporated for \$10,000 to manufacture ice cream and confectionery and conduct a general bakery.

NORTH CAROLINA

Elizabeth City—S, W. Wineke is establishing a modern ice cream plant which he expects to have in operation by June 1. New machinery is being installed including a 10-ton Continental ice machine, a 40-qt. Continental direct expansion freezer, viscolizer and other machinery all furnished by the Cherry-Bassett Co.

Newbern-The Atlantic Ice Cream Co. has been organized and has established a small plant. R. E. Smith is manager of the new firm.

Newbern-The Crystal Ice Cream has just finished

installing new equipment that will double its capacity. Rocky Mount—The Chapin-Sacks Corporation is

Rocky Mount—The Chapin-Sacks Corporation is building an ice cream plant which will have a daily capacity of 1200 gal. The work is being done under the supervision of the Plant Construction Co. of N. C. which is the construction end of the Chapin-Sacks Corp. The huilding is of re-inforced concrete 96 by 48 ft. The plant will be modern in every respect. A 50-ton horizontal double-acting York refriegrating machine will be installed.

Winston-Salem—The Peerless Ice Cream Co., has enlarged its plant, practically doubling its floor space with a new addition which includes an additional hardening room with a storage capacity of 3,000 gal, and a storage room which will store approximately five tons of butter. A new office has been built in and equipped with modern office faxtures. New machinery and equipment has been added including a viscolizer, pasteurizer, large ice crusher, can-trucks, ctc.

0H10

Marion-The Isaly Dairy Co. has taken over the Jersey Ice Cream Co. of this city.

Medina—Ben W. Tebbit has added a 4-ton York vertical enclosed refrigerating machine to the refrigerating equipment of his ice cream plant.

Norwalk-J. Byers is reported to be planning to establish an ice cream plant here.

Wapakoneta—The Fishers Purity Dairy Co. recently installed additional equipment bringing its ice cream capacity to 500 gal. and butter capacity to 500 pounds daily.

Zanesville—The Puritan Ice Cream Co. has installed a 4-ton vertical single-acting belt driven enclosed refrigerating machine and high pressure side complete.

OKLAHOMA

Duncan—The Duncan Ice Cream Co. is reported to have been organized to manufacture ice cream and allied products.

Lawton—J. A. Johnson & Sons, a recently organized ice cream company, has just completed a modern plant. The equipment which is all motor-driven includes one York compressor, 9 by 9, for 15-ton ice tank, one York compressor, 6 by 6, for hardening rooms, two 40-qt. freezer one 300-gal. mixer, one 200-gal. vat, one 500-gal. vat and a viscolizer. The new plant has two hardening rooms, 8 by 10 ft, and a storage room, 10 by 17 ft.

Tulsa—The Quality Ice Cream Co. has added to its refrigerating equipment a 12-ton York vertical enclosed refrigerating machine and high pressure side complete.

PENNSYLVANIA

Bedford—William Ross Lysinger & Co., has been organized to manufacture ice cream. The new firm is equipping a ice cream plant.

Coatesville—Breuninger Bros., have added to their ice cream plant a complete 10-ton medium pressure raw water ice making system furnished by Frick Co.

Harrisburg-The Russ Bros. Ice Cream Co., has installed new equipment including a 400 gal viscolizer. 50 gal. chocolate cooker, two 500 gal. Elyria glass-

lined enclosed top pasteurizing tanks and three 1,000 gal. glass lined enclosed top holding tanks, all five tanks will be covered with insulation and white enameled. The company recently converted one 3/2+100 White truck and four one-ton White trucks into re-

frigerator type bodies of the company's own design. Hazleton—Smith & Clark lee Cream Co., of Wilkes-Barre is remodeling a building here to be used as a branch ice cream plant.

Johnstown—The Galliker Ice Cream Co., 451 Franklin St., is erecting a 60 by 64 ft. two story garage and storage building.

Mahanoy City-Joseph A. Larkin is building an addition to his ice cream and bottling plant.

New Kensington—II. Behm & Co., ice cream manufacturers, has added to its refrigerating equipment a 2-ton York vertical refrigerating machine.

Oil City—C. A. Owen has entered the firm of 3 Moore Bros. with plants at Oil City and Meadville. The company is being reorganized and will be known as the Moore Bros. Co. The new firm will be composed of F. A. Moore, C. W. Moore and C. A.

Pottsville—The Spannuth Ice Cream Co. is reported to have taken over two buildings which will be converted into an ice cream plant.

Wayneshurg-J. E. Dinsmore is reported to be planning to erect an ice cream plant here.

Wilmerding-The Thacher Ice Co. has installed an ice cream department in its ice plant.

RHODE ISLAND

Pawtucket—The Fisk Drug Co., operating five stores in Providence, Pawtucket, Attleboro and North Attleboro is planning to erect a new ice cream and candy factory on Pawtucket ave. between Providence and Pawtucket.

SOUTH CAROLINA

Anderson—The McKay Ice Cream Co. has been organized by C. S. McKay and L. E. Girardeau and has taken over the plant and business of the Evans Ice Cream Co.

TENNESSEE

Chattanooga—The Peerless Creamery Co. has installed new machinery including a 40-qt. motor-driven Emery Thompson freezer.

Knoxville—The Sani-Seal Co. has added to the refrigerating equipment of its ice cream plant one 15ton. York vertical refrigerating machine and high pressure side complete.

Lewishurg—The Chapin-Sacks Corporation is erecting a condensory and ice cream plant combined. The buildings will be of reinforced concrete construction of the beam and girder type. The manulating will be 96 by 48 ft., having three stories and mezzanine. The engine and boiler room will be 24 by 48 ft., one story high. The plant will be located on both the L. & N. and the N. C. & St. L. railroads.

Memphis—The Lily Ice Cream Co. has been organized to take over the Lily-Purity Ice Cream Co. and the Memphis Ice Cream Co. and will operate in the plant formerly occupied by the Lily-Purity Co, the plant of the Memphis Co. being dismantled. The

new company is capitalized at \$150,000 with the following officers: President and general manager, H. G. Duttlinger; vice-president, O. W. Black; secretary, J. W. Surles and treasurer, H. J. Schaefer.

TEXAS

Corpus Christi—The Cloverdale Ice Cream Co. is building a modern ice cream factory with a daily capacity of 1000 gal.

Fort Worth—The Perfection Ice Cream Co. has been incorporated with a capital stock of \$\$0,000 by E. J. Roberts, J. S. Burrows and W. A. Atherton. Houston—R. H. Fonville is building a two-story ice-cream plant in the rear of his drug store at Hardy & Noble sts. He expects to begin operations about June I.

Waxahachie—The Arctic Ice Cream Co. is reported to have recently been organized and will soon commence operations.

Wichita Falls-W. E. Wright formerly of Sapullpa, Okla., has opened an ice cream plant here.

Yoakum—The Peerless lee Cream Co. has been organized by J. Nicholson and S. C. Tilly. The new company has leased the Mistletoe plant here which give it a two-story brick building with a 25-ton Frick refrigerating outfit and Miller 40-qt. freezers. The daily capacity of the plant is 1,000 gal., and storage capacity of 3,000 gal. The company will also make ice and butter.

VIRGINTA

Front Royal—The Warren Dairy Produce Ass'n, recently organized, will establish an ice cream plant and creamery combined. The plant will be equipped with modern machinery including a 15-ton refrigerating outfit for the hardening rooms and to make 4 tons of ice daily for packing.

Suffolk—The Suffolk Ice Cream Corp, has been organized with a capital stock of \$40,000 with E. Swope as president and M. T. Saunders, as sect-

WASHINGTON

East Stanwood—Regg Brothers have purchased a building which they are remodeling into an ice cream plant.

Tacoma—The Royal Ice Cream Co., 912 A st., has taken over the entire equipment of the Modern Dairy Co. The Royal company recently made improvements in its plant adding to its storage space, installing a 20-ton Frick refrigerating machine, and adding a direct-drive Miller freezer to its battery.

Tacoma—The Victory Ice Cream Co. has started operations in its new plant at 4542 S. Union ave. The daily capacity of the new plant is 2,000 gal. Included in the new equipment installed is an electric steam generator for sterilizing cans.

WEST VIRGINIA

Charleston—Leins Brothers are reported to be planning to manufacture ice cream, starting about June 1, in conjunction with their milk business.

Fairmont—The Robinson Ice Cream Co. has been incorporated with a capital stock of \$100,000 by F. R. Brahm, H. J. Ross and W. J. Boydston.

Ft. Atkinson-The Meier Creamery Co., a re-

cently established firm has purchased the building of the Northwestern Mfg. Co., which the new company in converting into an ice cream and butter factory. All new machinery is being installed by the Creamery Packase Mfg. Co.

Green Bay—The Green Bay Ice Cream & Dairy Co., has installed a 10-ton York vertical refrigerating machine and high pressure side complete.

Kaukauna—The Belleview Ice Cream Co., of Green Bay, has purchased the ice cream factory of John Niesen which will be used as a distributing

Shawano-The Shawano Ice Cream Co, is reported to have been organized and about to equip a factory.

TRADE NOTES

The Stout Crate Co., recently moved from Des-Plaines, III., to Milwaukee. Wis., with business offices at 373 Broadway. The company has taken over a modern factory building on the lake front and equipped it with up-to-date machinery for manufacturing tubs and cabinets.

W. H. Richman, manager of the can department of the John Wood Manufacturing Co., Conshohocken, Pa., was granted on April 5, 1921, patent No. 339,436 covering new features for a solderless rivetless container having a special bottom formation.

The Love Cone Co., 955-957 Hutchinson st., Philadelphia, Pa., which was organized in 1907 by Robert A. Love, has been incorporated with a capital stock of \$25,000 with R. A. Love as president and Mellville A. Love as secretary.

The Ke-Kone Co., Connellsville, Pa., has been organized with a capital stock of \$60,000 by Frank Mantell to manufacture ice cream cones.

EXPERIMENT IN BELTING

Will steel belting be practicable? This question is answered very clearly in an article by F. G. Hampden and W. E. Helmick, in a recent issue of the Journal of the American Society of Engineers. The authors say

An experimental investigation of steel beling was carried on at Leland Stanford University as a partial requirement for the degree of engineer. The belt used was 4½ inch wide by 01 inch thick, and was manufactured in this country from Swedish high-carbon steel, drawn, rolled, ground to size and tempered to a dark blue. The joint used was a silversoldered lap joint with about 05 per cent. efficiency rolled the property of the p

The apparatus used consisted of two cork-faced high-speed pulleys and two idler pulleys so arranged that the tension in each side of the belt could be ineasured. One large pulley was morer driven; the other was keyed to a Sprague dynamometer shaft. Series of ruis were made at different speeds with varying tension in the tight side of the belt. At each

tension the horsepower was varied.

From this work an equation was found for the tension in the tight side of a belt when a given amount of power is to be transmitted and a reasonable velocity of slip is assumed. The wear on the able velocity of slip is assumed. The wear on the pulley facings is in proportion to the slip, and hence it is advisable to keep this value low. Knowing the tension, the belt may be cut to length by computing the total elongation and cork depression due to this tension. This equation is H. P—17 T . 45. Where T is the tension in the tight side of the belt in pounds and V is the velocity of slip of the belt relative to the pulley in feet per minute.

The coefficient of triction of steel on cork was found

to be dependent upon the velocity of slip of the belt, the pressure of the belt on the pulley face, and the

belt velocity.

The efficiency of transmission was found to be about 98 per cent. except in extreme cases and was not tabulated.

CATALOGUES, ETC.

"A 400-Gallon Per Day Ice Cream Plan!" is the title of section Eight-A of the Davis-Walkins Master Catalug No. 6. just issued by the Davis-Walkins Parymen's Mg. (6., North Chicago, Ill. This 20 page illustrated booklet takes up the requirements of a 400 gallon a day plant.

The Gifford-Wood Co., Hudson, N. Y., just issued a new atalogue entitled "Mechanical Handling in All Lines of In-

Statement of the Ownership, Management, Circulation, etc., Required by the Act of Congress of August 24, 1912.

Of THE ICE CHEAM TRADE JOURNAL, published monthly at New York, N. Y., for April 1, 1921.

County of New York, State of New York,

State of New York, 184.

Before me, a notary public in and for the State and county aforesaid, personally appeared Peter Trimborn, who, who was a state of the personal personally appeared Peter Trimborn, who, that he is the business manager of Tits fac (acan Taske Joussel, and that the following is, to the best of his management (and if a daily paper, the circulation), etc. of the aforesaid publication for the date shown in the above in section 443, Postal Laws and Regulations, printed on the reverse of this form, to wit dresses of the publisher, editor, managing editor, and business manager are: Publisher, Thomas D. Cuiler, It'l Madroon Ave., New York, N. Y.; Marsing Eddor, Robert C. Hubber, 171 Madroon Ave., New York, N. Y.; Business Manager, Peter Trimborn, Ave., New York, N. Y.; Business Manager, Peter Trimborn, Ave., New York, N. Y.; Business Manager, Peter Trimborn, J. Cliff the owners are: Give names and addresses of

1/1 Madison Ave., New York, N. Y.
2. That the owners are: (Give names and addresses of individual owners, or, if a corporation, give its name and the names and addresses of stockholders owning or bolding I per cent, or mire of the total amount of stock.) Thomas-D, Cutter, 171 Madison Ave., New York, N. Y.

D. Cutler, 171 Madison Ave., New York, N. Y.
3. That the known bondbolders, mortgagees, and other security holders owning or holding 1 per cent. or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.) None.

total amount of bonds, mortgages, or other securities are:

4. That the two paragraphs next above, siving the name of the owners, stockholders, and security holders of any, as they appear upon the hooks of the company but also, in cases where the stockholder or security holder appears foliciarly relation, the name of the person or corporation for whom such trustee is acting, is given; also that the full and the stockholder of the person or corporation for whom such trustee is acting, is given; also that the full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who hold stock and securities in a capacity other than that of a bona fide owner; and this attitude has no reason to believe interest direct or indirect in the said stock, honds, or other securities than as so stated by full interest direct or indirect in the said stock, honds, or other securities than as so stated by full.

Sworn to and subscribed before me this 29th day of March.

Ferer Leimborn, Business Manager, Sworn 10 and subscribed before me this 29th day of Mary 1921. May C. Guerin, Notary Public, Kings County, Certi-ficate filed in New York County. (My commission expires March 30, 1921.) [584L.]

OBITUARY

Mrs. Robert Crane

Mrs. Robert Crane, wife of Robert Crane, President of The Craue Ice Cream Co. of Philadelphia and of The Association of Ice Cream Manufacturers of Pennsylvania, died on Tuesday, April 19, 1921. The funeral, held at the Crane home, 533 Hortter st., Germantown, Philadelphia, on April 22, was largely attended by members of the Pennsylvania Association and ice cream manufacturers from other

Mr. Crane has requested that he be permitted to express through THE ICE CREAM TRADE JOURNAL his appreciation of and thanks for the kindness and sympathy of his many friends in the industry.

WANTS, FOR SALE, ETC.

Advertisements under this head, six cents a word each insertion, classification head and address not to be counted. Minimum charge \$1.00. Remissance Must Accompany Order. Help and situation want ade will be given one insertion free.

STELATION WANTED—As superintentient of fee erroin and milk plant. Thoroughly understand all modern method milk plant, and the state of the state of

SITUATION WANTED—As factory manager or director of laboratories. Thoroughly familiar with all branches of the industry. At present teaching ice cream making, faclife industry. All present teaching the cream making, fac-lory management, milk-contensing and milk powdering, dairy chemistry and dairy bacterology in State folloge work. Should you have either position of factory man-ager or director of laboratories open in the near future, I would be pleased to give references and arrange for interview. Address M. D. L., care The Ice Cream Trade Jutesala.

SITUATION WANTED—By practical ice cream maker. Twenty years' experience. Fancy creams a specialty. At present manager of plant producing 300,000 gal. per year but ilestrous of making a change. Can give best of references. Address M., care The Ire Cream Taxon Journal.

SITUATION WANTED.—As manager or assistant manager of an sec cream plant. Experienced at accounting, credits, advertising, purchasing. At juckent general assistant to president of a plant selling 7,000 gallons per day at its peak. Address 1. A., care THE tec Christ Thomps Journal.

SITUATION WANTED—As working manager or superintendent of ice cream plant; nine years' experience; can go anywhere. Will also consider justineship proposition in a smaller plant. Age 30, married. Address II. V. Larsen, Stenline, Denmark.

SITIATION WANTED—Young man with dairy school training desires connection with ice cream plant as foreman year's experience, familiar with all details and operation of modern machinery and equipment. Address B. P., care Tur. I. K. CHAM TRANK JOLESAL.

SITUATION WANTED—As manager of large ice cream business. Wide experience in manufacture, handling and sales; a good executive. Give full particulars in first letter. Address D. T., care The Ice Chram Trade Jouenal.

SITUATION WANTED—As superintendent or foreman of an ice cream plant. University graduate with eight years of practical experience. Familiar with all branches of the dairy industry. Best of references furnished. Address M. K., ear Tim Lic CREAM TAND JOUSMA.

Struation Wanter-By an all round ice cream maker; 14

years' experience. Married and can go anywhere. Address P. G. R., care The Le Cream Trape Journal.

SITUATION WANTED—By an ice cream maker of nineteen years' experience; understands viscolizing, homogenizing, pasteurizing, testing and standardizing of the recent cream control of the co

Streations Wantep—By experienced men at salaries from \$60 to \$200 a week. Our men really know the business. Address fee Cream Managers & Superintendents Association, E. A. Kellogg, Secretary, Room 6/14, 286 Fifth Ave., New York City. Telephone Longarte 4073.

HELP WANTED-A young man who is willing to go with an mp-to-date concern as an ice cream maker. State qualifica-tions, references and salary expected in first letter. Address Y. Z., care Tine Ice Cheam Trade Journat.

HELP WANTED—Experienced ice cream maker, able to pre-pare and standardize mix and understands homogenizing and viscolizing. Address N. E. M., care The ICE CREAM TRADE JOURNAL.

Helf Wanted-At once, a good brick man to cut solid pints and quarts. Salary \$32 for 6 days. Bushway lee Cream Co., Boynton's Yard, Somerville, Mass.

HELF WANTED-An experienced ice cream maker to take full charge of plant with an output of 800 gallons per day,

Willing to pay good salary for experienced man. Address Abdella Ice Cream Co., Inc., Gloversville, N. Y.

Help Wanted-Ice eream factory in eastern city with growing business wants ice cream maker as foreman. We want a man who has had real experience in up-to-date plant. State wayes desired, references, age. Address X. Y., care THE ICE CHEAT TABLE DITENAL.

For SALE—Emery Thompson upright freezer with centrifugal pump, brine box and fittings just recently overhauled. Also one 40 gal, mixing rank like new; about 150 ft. 2 in. Also one 40 gal, mixing rank like new; about 150 ft. 2 in. almost new. Une tank 5 ft. high by 2 ft. in diameter with 1½ in. endless coil misdle with invalation, never used. Give offer for part or whole. Address 1126 Buttonwood st., Reading, Pa.

Foa Sale—lee eream factory and building. Equipment all in A-I condition. Owners wish to retire. Will sell plant separately. For further particulars address Established, care The Ice Cerm Trans Jouanal.

For SALE—Fifty 5-gal, cans and tubs. Good condition, First \$175 check for quick sale, F, W, Wilson, 23 E. 2nd Ave., Columbus, O.

FOR SALE—Motor driven National cash register designed especially for use in a creamery. Machine in excellent condition. If interested address National, care The Ice CREAM TRADE JOURNAL.

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Secretary—Go. A. Decker, 1411 Church St., Nashwile

For SALE—One Mojonnier ice cream overrun tester com-plete and in first-class condition, never having been used. This can be had at a bargain. Lily Ice Cream Co., Memphis, Tenn.

For SALE—One Turnbull roll cone machine in perfect con-dition, one year old. 14,000 see cream cone boxes, 100 to box. Sell machine and boxes reasonable for quick sale. Doughty Ice Cream Co., East Providence, R. I.

FOR SALE—One Miller ice cream freezer, belt drive, chcap. Address C. V. Creamery & Dairy Co., Chambersburg, Pa.

Foa Sale—Eight-ton York refrigerating machine with helt and gauges. Run less than eighteen months. A. E. Wil-liams Ice Cream Co., 215 N. Hamilton ave., Saginaw, W. S., Mich.

FOR SALE-Two Progress brine ice cream freezers.

interested write its. We can save you money. Address Progress, care The Ice Cream Trade Journal.

For SALE—One 20-qt, C. B. brine freezer, belt driven, good condition, price \$150 f.o.b. Waukegan, Ill. Installing motor driven machinery reason for selling. Address Durkin Ice Cream Co., 209-11 Spring st., Waukegan, Ill.

For Salar—One De Laval Emulsor, 200 gal, per hour, belt driven, good as new, price \$350 f.o.b. Waukegan, Ill. Installing motor driven machinery reason for selling. Address Parkin Ice Cream Co., 209-11 Spring st., Wau

FOR SALE—Three new Cherry Model "1" 60-qt. freezers, motor driven. Rich Ice Cream Co., Buffalo, N. Y.

For Sale—One Progress vertical brine freezer, operated 6 months, excellent condition. One 4000-lb. Sharpless steam separator; one brine pump, suction, 1-inch; discharge, 1-

	V-l William C. 1. O.
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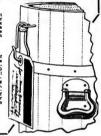
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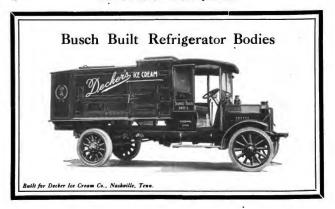
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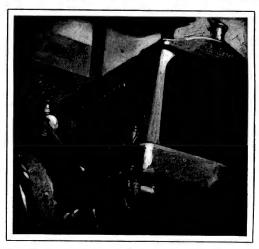
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Ask the man who owns one

The Greatest Trade Stimulator



For Ice Cream is that which points to purity. Advertise to the consumer the care you are taking to protect them by using

ALLEN'S ONE-PIECE SANITARY CAN LINERS



Samples and Prices Upon Request

Sold by Your Supply Man or Write Direct to

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Sole Manufacturers

Pontiac, Illinois

Copper Steam Jacketed Kettles



Used extensively in Ice Cream Piants for Dissolving Gelatine, Mixing Chocolate Syrup, Cooking Fruits, Inverting Sugar and Pasteurizing small lots of Kettles milk. are also furnished with Covers or Agltators.

Heavily Tinned Inside.

If your Supply House cannot furnish this well-built, fast boiling kettle, write us direct.

GROEN MFG. CO., Inc.

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4529 ARMITAGE AV., CHICAGO, U. S. A.

Mojonnier Tester

An Essential in All Up-to-Date Ice Cream Plants. Soon Pays for Itself — Then Pays Dividends,



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The "NEW ERA" Ice Cream Brick Cutter

The NEW ERA will cut your ice cream into quarts—pints—six, seven, eight or nine cuts to the quart—with speed and accuracy,—absolutely uniform.

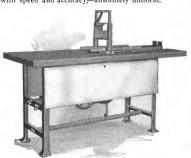
Motor Driven-Works
Automatically

Reduces Your Brick Cutting Expense.

Simple in Operation.

Durable in Construction.

Write TODAY for Circular.



THE NEW ERA COMPANY, P.O. Box 172, Oshkosh, Wisconsin



Have you a
"Cyclone" Ice Gream Brick Cutter
in Your factory?

If not you are behind the times.



3 Cyclones being used at factory of A. CARDANI, 937 6th Ave., N. Y. C.

Get up to date. Write for further Information. Communicate with

LOUIS CUMMINGS 1035 Third Ave. New York, N. Y. WRITE OR WIRE YOUR CAN ORDERS FOR

IMMEDIATE DELIVERY

(Repeat Orders Now Coming In Prove Worth and Quality of These Cans)

RIVETLESS—SOLDERLESS

"Three Pieces Welded Into One"

NO SOLDER NO RIVETS NO LEAKS

EVERY CAN GUARANTEED IN EVERY PARTICULAR

Electric Weld Ice Cream Cans are practically seamless being made complete in the black and then tinned by soaking in pure straits tin. In addition to their strong, sturdy construc-tion due to welding, they can be retinned over and over again at less cost due to the absence of solder and the fact that they are practically one piece.



TEN BIG FEATURES:

- 1-Low cost. -Absolutely sanitary, no solder, no lead to contaminate contents.
- -Adaptability to retinning. Easily and cheaply retinned-do it yourself.
- Eliminates the leak nuisance,
 Bottom and cylinder welded into
 a solid mass—can't leak.
 Strength where needed.
- -Rust-resisting metal.
- "Non-deforming" lid
- -Exact capacities, standard di-mensions. Lids interchangeable with all standard makes of cans,
- embossed with your name, capacity in quarts, liquid.

 -Quick delivery from our eight warehouses Boston to San
- Francisco. 10-Endorsed by leading manufacturers

NEW PRICE LIST READY Electric Weld Cans for service. Send us a trial order for these cans and satisfy yourself now before investing money in the old style, wasteful riveted and soldered cans.

(PULLY PROTECTED BY PATENTS PENDING)



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Dairymen's Milk and Ice Cream Cans-Dairymen's Brick Moulds.



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We also make Davis Milk Machinery, Dishrow Churns, Economy Pastentizers, Minnetonna Butter Makers, Pumps, Fittings, Testers, Refrigerating Equipment, etc. Write nearest office about any machinery and supplies you need, Write nearest office for our Low Prices and incremation on lee Cream Machinery and Supplies. We manufacture lee Cream Freezers, Homogenizers, Bateh Misers, Cana and Briek Moulds, Coll Yats and Cream Ripeners, Starter Cans, Weigh Cans and Tanks, Milk and the Cream Can Wash-Cans and Tanks, Julk and the Cream Can Wash-Can Canada and Canada Canada

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interested in items noted on margin of this coupon

Name.....

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MSL-1 Makers of the Famous Dairymen's Cans

THE C-B CALENDAR



Brick Tank

Packaged

Ice Cream

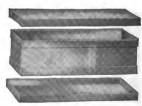


Brick Slab

Brick Ice Cream will eventually be the standard method of marketing all ice cream.

BOTH consumer and manufacturer likes brick ice cream. Its sale is assuming big proportions, and why not? Ice cream is more attractive in this form and offers important advantages.

Our "Superware" equipment for brick ice cream is associated with the increased popularity of bricks. It is bought by the largest manufacturers in the country in greater quantities each season, because of its high grade workmanship and superior designs. "Superware" is made in our Baltimore shops. Send for booklet and prices.



2-lid Brick Mold

CHERRY-BASSETT COMPANY

PHILA DELPHIA

BALTIMORE









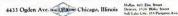


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ICE CREAM CARTONS

Command atten-tion thru their distinctiveness and

CHICAGO CARTON





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THE GLACIFER DRY PACKER

OFFERS A READY SOLUTION

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SHIPPING TAGS

ANY SIZE, COLOR, QUALITY OF QUANTITY.
STRINGING, WIRING & BRASS EYELETS.

PRINTED | ONE OR TWO COLORS
ONE OR BOTH SIDES

NOTE—-State Size, Quality Color and Quantity wanted and we will quote prices.

FLAVOR TAGS for ICE CREAM CANS

Used on regular Packing Cans Printing and Color designates Flavor

USE TAG ENVELOPES and save \$20.00 postage per 1,000

CHAMPION TUB COVERS



Come equipped with a special metal tipped tie cord.

Sold direct to the user by the Manufacturer. No Jobbers' profit added. High in Quality.

Low in Price.

Sample and price on application.

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Anything of Canvas
Oshkosh, Wisconsin

D-C Iceless Express Container



Price \$15, F.O.B. Factory. Discounts on quantities. Write for particulars. No Longer An Experiment

No Ice—No Salt—No Tub—No Labor
No Salty Ice Cream—ever.

Guaranteed to hold well-hardened ice cream perfectly for 12 hours under most trying conditions. Under favorable conditions, as in a basement or other moderately cool place it will hold ice cream 24 hours or longer, thus making it possible to deliver Sunday supplies on Saturday.

Shipping weight about 85 lbs. Reduces express charges approximately 25%.

One shipper reports that savings effected, including express saving, average 10 cents a gallon.

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The Highest Class Cover

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Made from heavy, doublefilled duck. They will outdistance any cover on the market.

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Ice Cream Storage Tanks at the plant of the Bartholomay Ice Cream Co. Rochester, N. Y.

HE summer is very nearly upon us, your flush season is about to begin, and only by increasing your facilities for storage, now, will you be able to maintain a sufficient supply of mix to meet all conditions! If, on account of machinery trouble, or for any other cause, you are obliged to shut down for 24 or 48 hours, or even more, it will not be necessary to inconvenience your trade in the least, or to run the risk of losing some of your customers, by not being able to supply them.

We have in stock ready for immediate shipment, subject to prior sale, a number of 500 gallon mixing and pasteurizing tanks-also 1000 gallon storage tanks.

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Davis-Watkins Dairymen's Mfg. Co.

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Our Executives and Engineers have spent the last two years on investigations of GLASS and ENAMEL Tanks.

As a result our Organization has become Distributors to the Dairy and Ice Cream Trade for "GLASCOTE" Tanks, Vats, Weight Tanks, Ice Cream Storage Tanks, etc.

Our reasons for so doing are:

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They must be kept CLEAN or they show it

Because it's white must be perfectly made—otherwise defects are plainly visible

GLASS is SUPERIOR to Enamels

It is harder, non-porous and insures freedom from checks or cracks due to quick changes of temperature

Made in a NEW FACTORY—modernized and up-todate facilities for efficient manufacturing.

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You can be sure of the efficient design, the sturdy construction and the uniform operating capacity of Elyria Glass Enameled Tanks because they are carefully built by skilled workmen under the supervision of expert engineers.

And, they are installed in your plant, only after a thorough investigation has convinced us that certain units and systems are best suited to give you maximum production at minimum unit cost.

A letter will start Elyria Service and Evidence on its way. We are ready. Are you?

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Vertical Condensed Milk Cooler



VERTICAL SUSPENDED COIL rotates from bottom up—works air and gas out of product.

CANS, once filled, STAY FILLED. Flavor Control Positive from Mechanical Standpoint.

Prevents Sand and Grittiness. Elimination of Stuffing Boxes.

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Builders of "Equipment of Practical Efficiency"

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E know you have no interest in this plant or its equipment until you find yourself in need of pumps or information about them, their selection—installation—or operation.

Then is when you will appreciate the possibilities here and be glad there is such a pump factory making pumps for the milkproduct industry.

You know these men—they know us, they have sold you the Viscolizer and can help you in any pumping problem.

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For low first cost, saving in space, power, time and labor, no system of batch mixer can equal the Manning. This Batch Mixer is one of the most popular items in the famous line of





the uncereatney of hand work and insures absolutely clean cons - inside and counties absolvely clean case—inside and cuantile met a untilnium cost. Easy on the case, ren. Made in both wood and seed body. Cut shows seed body with direct con-nocted motors, Send for our Can Washer caralog. The low cost will surprise year.



The Manning coil, with double inlet and outlet, together with the feed pipe of same capacity cut in half the time required for heating and cooling. This saving in time is a real item in any milk plant.

With low first cost, economical upkeep and great efficiency the Manning represents the last word in uniform mixing.

Write us for catalog and name of dealer near you

Manning Manufacturing Co. Rutland, Vermont

MANNING CAN DRIER

Meet the public demand for a cleaner, better product by drying all your cans. It's the only way to be sure of low bacteria content and prevent rust.

The Manning Driet operates like clock work-dries four cans end four covers at once. Handles any size

of milk or ice cream cans. Write us today for our



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Simplicity_Safety_Efficiency_Durability



Price

200 to 400 Gals. \$1,000.00

THE DUMORE has proven its value in recombining dairy products and making a perfect homogeneous mass of an ice cream mix. It eliminates operator, mechanic, repair bills, motor and belt troubles, delays any possible accidents. If patented it would sell for five times its price and still be the cheapest machine of its kind for it lasts a life time.

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THE ELYRIA ENAMELED PRODUCTS CO., Elyria, Ohio

Manufacturer

NATIONAL STEAM PUMP CO., Upper Sandusky, Ohio

The Improved Little Giant

Can Washer

Washes Cans Clean and at Lightning Speed

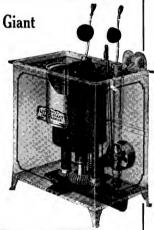
That's the reason the largest plants are using it. All sizes of cans, from 4 to 40 qt., are thoroughly cleaned both inside and outside without change of brushes. Washes cans better than machines costing many times more. Furnished either with belt drive or with direct connected motor.

Catalog for the asking.

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Crushed Ice and Salt Elevators



Ice Cream Can Tongs, Used for Lifting Ice Cream Cans out of Tubs. Etc. Life of Cans Increased 100%



CRUSHED ICE ELEVATOR Graham Ice Cream Co. Omaha, Neb.

You can handle your blocks of ice, crushed ice and salt quicker and at far less cost with G-W equipment.

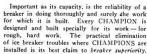
We are specialists in designing elevating and conveying machinery and our Engineers are experts in solving handling problems. Let us suggest an equipment for your needs and quote prices for your considerationno obligation incurred.

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WORKS: HUDSON, N. Y.

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CHAMPION NO. 11, shown here, is designed for the most modern ice cream factory and has a capacity of 40 to 60 tons of broken (not crushed) ice per hour. It can be set on the floor or hung from the ceiling. Motor driven, either belt or chain drive; motor protected by an extra heavy reinforced iron hood. Use drives its diamond pointed teeth more firmly

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This letter is representative of those constantly being received from more than 16,000 satisfied users of Creasey Ice Breakers. The Creasey Ice Breaker line is being improved and added to every year, and there are now about 20 different models and sizes, providing for every requirement from small hand-driven machines for hospital use to heavy power-driven machines that will deliver broken ice at the rate of 50 tons per hour.

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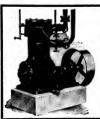
State your particular requirements and, at the same time, ask for our new catalog No. 909T.

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Tycos Engineers have investigated, classified and produced instruments for every temperature need in the Ice Cream Industry.

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For Cold Lines, Coolers and Tanks

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McCormick Service

offers you the logical and economical insurance

Back of McCormick plans and specifications is an experienced engineering skill and an expert knowledge of the dairy and ice cream business which guarantees efficient and positive results. Being in long and intimate contact with the methods employed and results obtained by the most successful plants, McCORMICK SERVICE is an assurance to prospective builders of an efficient work shop produced at minimum cost—free from expensive blunders and miscalculations.

McCORMICK SERVICE, therefore, becomes an insurance policy which protects you against both structural and operating deficiencies, thereby enhancing the tangible valuation of your plant investment.

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PITTSBURGH Century Bldg.

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Construction Executed by Your Own Contractor Under the Direction of Our Visiting Superintendents

LARSEN Ammonia Compressors

in Capacities from 1 to 50 Tons Available for Immediate Delivery at Exceptionally Attractive Prices

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Hundreds of Satisfied Users are Pleased with the Reliability, Simplicity and Economy of Operation of Larsen Ammonia Compressors

Special Discounts Quoted for Re-Sale

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Mechanical Refrigeration

stands for better sanitary conditions, even temperatures, improvement in the quality of the goods stored and a reduction in the amount of goods lost.

Heavily built and reliable machinery is essential in the successful operation of the modern refrigerating plant. Small and medium size compressors together with installation views showing the application of mechanical refrigeration to various businesses are described in Ice and Frost B4—copy mailed on request.

To save time, address branch nearest to you, and Bulletin B4, which is just off press, will be mailed you.



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FORTY years of constructive service have given this name a prestige of which we are justly proud. Vogt Refrigerating Equipment for Ice Cream production assures Efficiency, Economy and Safety. It operates on exhaust steam, and has no rapid running reciprocating machinery.



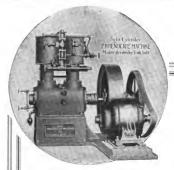
HENRY VOGT MACHINE COMPANY

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We manufacture Ice Making and Refrigerating Machinery, Drop Forged Steel Valves and Fittings, Water Tube and Horizontal Return Tubular Boilers, Oil Refinery Equipment. Write for Bulletins.

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Twenty-five years of engineering skill and experience are represented in Phoenix equipment. During this period we have carefully watched the performance of every Phoenix Machine and have been unstituting in the matter of improvements wherever

SERVICE WELL RENDERED

and whenever possible. Phoenix service is well rendered.

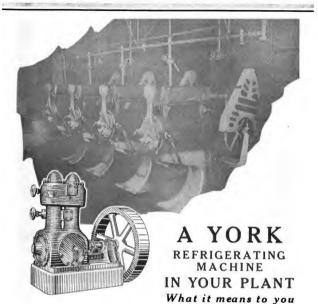
The result is a long list of Phoenix Lee Machines giving the same reliable service they did years ago. Phoenix equipment sold today will be performing just as faithfully in years to come. It is a part of Phoenix service—well rendered. Why not get the best?

The Phoenix catalog on request.

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Crane Ice Cream Co., Phila., Pa.

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You are independent of the ice crops. You are looked upon by the trade as a pro-

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YORK MECHANICAL REFRIGERATION

Freezer Room in Detroit Creamery Company's Plant at Detroit, Michigan



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Eliminate troubles by purchasing

Simplified Arctic The

A Plant That Has Always Made Good

Both Horizontal and Vertical Types In sizes from 1 to 1000 tons capacity We specialize in Ice Cream and Dairy Plants

Send for information blank, if you desire quotations

THE ARCTIC ICE MACHINE CO., Canton, Ohio



Creamery Package Vertical Refrigeration Sys-tem with Outer Bearing. We also make hori-zontal machines and can provide machines in any size. Made in our own plant at DeKalb, III.

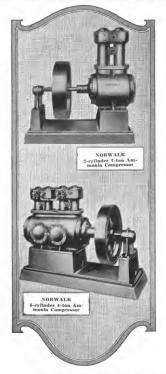
If you are contemplating the installation of a mechanical refrigeration system, by all means send for copy of our booklet, "The Story of Refrigeration," which gives the ins and outs of refrigeration for an ice cream plant. No obligations of course.

We have been installing mechanical refrigeration in ice cream plants for the past 25 years and as our men are ice cream plant engineers we can save you money on a refrigeration plant and provide one that will best fit the peculiar needs of your plant. Send for "The Story of Refrigeration." Address

The Creamery Package Mfg. Company 61-67 W. KINZIE STREET, CHICAGO

Branch Offices in Principal Cities.

NORWALK REFRIGERATING PLANT



A single failure of your refrigerating system may wipe out the profits of a month, so it is vitally important to know in advance that the refrigerating plant you select is designed and built to give you full protection.

The Norwalk Refrigerating Plant owes its distinctive reliability to its simplicity of construction. It is of the ammonia compressor type, which the Norwalk Company is ideally equipped to build, having established an international reputation over a period of nearly half a century in the manufacture of high grade air and gas compressors for all uses.

In addition to giving continuous reliability the Norwalk minimizes power consumption; delivers full results for every minute of operation; requires no tinkering and little attention; has trivial upkeep and rarely needs replacements, even after severe service. It occupies small floor space, runs smoothly and silently and provides at all times the precise temperature needed. It protects profits, eliminates bother and insures permanent satisfaction.

Tell us your requirements and let us explain what Norwalk refrigerating efficiency will do for you. Write us today.

THE NORWALK IRON WORKS COMPANY Pioneer Builders of Compressors SOUTH NORWALK CONN.

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Built for the Freezer Room

Air tight, water tight, steam tight, sensitive working parts entirely enclosed. Ruggedly built to withstand hard usage in the freezer room.

Mojonnier Ice Cream Overrun Tester

accurate and instantaneous method of testing the overrun while the ice cream is still in the freezer, enabling the operator to control his output

Sold direct or thru your jobber. Write for Illustrated circular.

Apparatus pat enis pending. Beware

onnier Bros. Co.

MILK ENGINEERS 739 W. Jackson Boul.

Chicago

BRANCH SALES OFFICES, New York, 79 Sherman Av. St., Louis, 4931 Margaretta Atlanta, 316 Bedford Pl. Sentile, 600-A Central B

NOTICE

Don't change from The Bunker System

The Still Air System before investigating The Buffalo System

> Saves space time and money

Buffalo Refrigerating Machine Co. 39 Lafayette St., Brooklyn, N.Y.

Established 1880



CONTINENTAL

Direct Expansion Ice Cream Freezer

SAVES TIME

You can start freezing ice cream at the same time you start compressor. No Delays.

Isn't this a big item?

Freezer has right temperature at all times if compressor is running.

No wait for brine to cool.

You can freeze a batch in jig time.

We also manufacture a full line of refrigerating machinery,

CONTINENTAL MACHINERY COMPANY

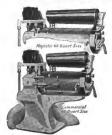
General Office

111 W. Monroe St., Chicago, Ill.

Fort Madison, Iowa

EXPERIENCE ALWAYS TELLS U. S. Giant 160-Quart Freezer Making Good

Read what Sachter's Ice Cream Company, Brooklyn, New York, say:



"We are so pleased with the results we got from our two 160-quart Giant U. S. Heavy Duty Freezers, that we have decided to order another one-making three alto-gether. We are now taking out all our old freezers, consisting of seven 40-quart machines.

consisting of seven 40-quart machines.

The difference of the control of the cont

ls. from 256 quarts to 450 quarts) we will have more more more space than we did before, and we need this very much for business with the space of the U.S. Giant that makes so enthusiastic. U.S. Freezers seem to be designed and kuilt especially to eliminate all the mechanical direction of the space of the U.S. Giant that makes a second of the space of the control for the space of the control for the space of the control the open space of the control the overrun, and the texture of the cream turns out—that is, its feel—is wonderfal.

Freezer to any progressive manufacturer who can appear to the control that the

Freezer to any progressive manufacturer who can ap-preciate a good thing, and knows what a modern freezer should be like."

Exclusive Features and Other Special Advantages

Roller Bearings (On all large sizes-optional on smaller sizes.)

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optional on smaller sizes.)

Widest and Most Complete Bange of Sizes-40 to 160 quart.

The Largest lee Cream Freezer in the World is a U. S. Heavy Duty Freezer.

Rapid Vertient Discharge.

Exceptional Whipping Device. Hinged Cylinder Cover on all Sizes.

Separate Spinshless Openings for Cream, Fruit and

Inspection. cial Arrangement for Admitting Fruits and Flavors to Insure quick, Thorough Mixing. Special

Brine Control Valve of Unusual Design. Vo Iron or Other Corresive Metals to Wear or Come in Contact with the Cream laside the

Freezer. Adjustable Motor Table.

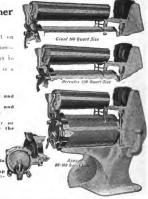
Guard With Chain Running in Oil. Enally Converted From Belt to Motor Drive

and Vice-Versa.

Shaft, Bearings and Genra of Finest Materials and Extra Heavy Construction, Brine Jacket and Passages That Do Not Clog up Ensily or Lenk, Yet are Accessible for In-

spection and Cleaning. Bulted-together Unit Principle of Assembly,

Preconling (ontlonal)



A REALLY HEAVY DUTY MACHINE

The price is right down now. Don't walt until the hot season approaches before placing your order. If you do, you may have to suffer from slow delivery. Ask for our circular "How to Tell a Good Freezer."

U. S. Freezer & Machine Corporation 270 Union Avenue, Brooklyn, N. Y.

Representatives and distributors in all parts of the United States and t anada.



The Buyer's Page





Used by the Following Ice Cream

Masufactures:
J. M. Horton lee Cream Co.
Crane lee Cream Co.
Crane lee Cream Co.
French Bros.-Buser Co.
Furnas lee Cream Co.
John Cunningham.
Thompson Reid lee Cream Co.
Whests lee Cream Co.
Metogolian lee Cream Co.
Metogolian lee Cream Co.
Co.
Chapin-Sacks Co.
McGride Brothers & Knobbe.

Creasey Ice Breaker 20% to 50% Heavier-Longer Life

T HE Creasey is built oversize throughout—that is why it has a reputation for standing up under hard service year after year. The Creasey method of fastening the picks to the drum is nuique. To detach, simply drive in a wedge behind them—yet they cannot work loose when in operation. No rivet heads—no botts or nuts to work loose.

The size of the broken ice can be regulated by fine or coarse combs which prevent passage of the ice until it is broken small chough to pass through—a feature of special value to ice cream makers. Two or three combs are furnished with each machine.

Wherever ice is broken, you'll find the Creasey standard equipment—from the White House to the largest ice cream manufacturers.

We are now prepared to ship the Creasey direct from Chicago—quicker deliveries. Spare parts are on hand at all times. Send for circular showing why more than 16,000 Creasey Breakers are in use.

U.S. Brine Freezer Sturdy-Dependable

HEAVY design throughout, with ample bearings, large gears and adequate lubrication.

As a Belt Driven Machine, the U. S. Freezer can easily be converted to a motor driven machine in your own factory if desired. Three Horse Power motor, with 2-inch silent chain drive is furnished. Entire adjustment of the chain can be made by means of the lock nuts fitted to the supporting rods under the motor table.

The Hinged Cylinder Cover, now standard on all sizes, makes the U. S. Freezer quickly accessible for cleaning. The Brine Jacket Passages are designed for the greatest efficiency in cooling the cylinder and are arranged to avoid all clogging and stopping. The brine flow is controlled by a By-Pass Valve of special design which gives complete control of the rapidity of the freezing process.

Let us give you further particulars. Send for catalog and prices.

See our exhibit at the National Dairy Show, Minneapolis-St. Paul. Oct. 7th to 16th, 1921.





A.H.Barber Creamery Supply Co. 310 W.Austin Ave., Chicago, U.S.A.

The real truth Never grows old.

The H. H. Miller Industries Company

Were first to-

Revolutionize—Standardize Successfully develop Brine Ice Cream Freezers,

Our freezers are-

Thoroughly durable—Completely efficient Highly economical—Absolutely sanitary.

Economy means-

Good design—Accessibility of parts
Modern production methods—Choice materials
Skilled labor—Longest experience.

Efficiency means-

Less power to operate—Desired yield More rapid freezing.

Our freezers are the-

Greatest bargains—Greatest money earners Longest wearing—Simplest of construction.

We manufacture under original Patents.

We infringe nobody's rights.

We pioneered the brine ice cream freezer, and today we still set the standards for a host of imitators.

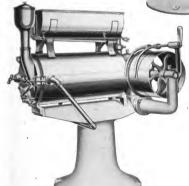
The H. H. Miller Industries Co. CANTON, OHIO

The H. H. Miller Industries Company CANTON, OHIO

Tyson Model "C"
Horizontal
40-quart
Brine Ice Cream
Freezer. Belt
Drive, with

Fruit Hopper.





Miller Pyramid Horizontal

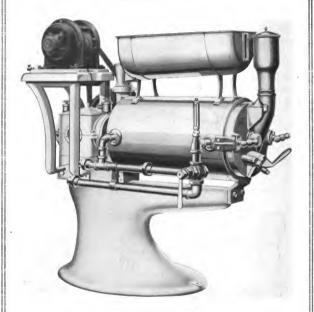
40-quart Brine

Ice Cream

Double Beater.

THE H. H. MILLER INDUSTRIES CO.

CANTON, OHIO



"THE MILLER" LIBERTY

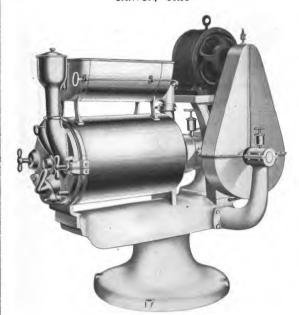
HORIZONTAL BRINE ICE CREAM FREEZER.

DOUBLE BEATER. 60 and 120-QUART.

MOTOR DRIVE ONLY.

THE H. H. MILLER INDUSTRIES CO.

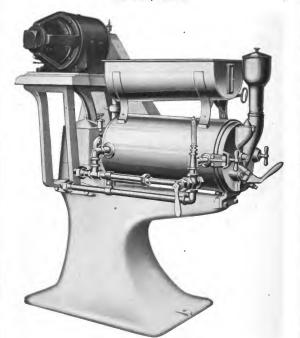
CANTON, OHIO



"THE MILLER" PYRAMID
HORIZONTAL BRINE ICE CREAM FREEZER.
DOUBLE BEATER. 80-QUART.
MOTOR DRIVE ONLY.

THE H. H. MILLER INDUSTRIES CO.

CANTON, OHIO



"THE MILLER" ANVIL BASE.
HORIZONTAL BRINE ICE CREAM FREEZER.
DOUBLE BEATER. 40-QUART.
MOTOR DRIVE.

Hear ye! Hear ye!

June 25, 1915

COMMON PLEAS COURT STARK COUNTY, OHIO

The H. H. Miller Industries Company is successor to The Miller Pasteurizing Machine Co, which, in order fully to protect the rights acquired by it in the property and business, including the good will of the business, of The Tyson Company, joined, as plaintiff, in a suit in the Court of Common Pleas in Stark County, Ohio, against The Tyson Company, The Advance Dairy Machinery Company, and Frank Tyson, among others, as defendants. Upon the issues joined the Court has found in favor of the plaintiff and against The Tyson Company, The Advance Dairy Machinery Company, and Frank Tyson among other defendants.

As a result of the decree in our favor, the defendants, The Tyson Company, The Advance Dairy Machinery Company and Frank Tyson are now enjoined, among other things, from manufacturing or causing to be manufactured, any tice cream freezers covered by Letters Patent of the United States owned by The Tyson Company at the time of the sale; from filling or supplying any order for repairs and parts for such Tyson ice cream freezers; and from doing any act or thing which will directly or indirectly interfere to any extent with our exclusive enjoyment of the right, license and privilege to make, use and sell all devices covered by the claims of such Letters Patent.

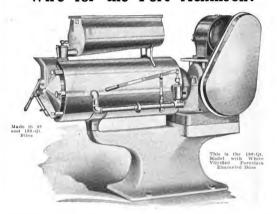
They are also now enjoined from doing any act or thing which will directly or indirectly interfere to any extent with our exclusive enjoyment of the business or good will of the business owned by The Tyson Company or Frank Tyson, jointly or severally, at the time of the making of the agreements of sale; and from affirmatively doing any thing to cause the public or trade to believe that The Advance Dairy Machinery Company is the successor in business to The Tyson Company.

The H. H. Miller Industries Company, alone is licensed to make Tyson freezers. It is now in possession of the manufacturing equipment, stock of material, etc., necessary to enable it to continue the Tyson line. We are manufacturing, intend to continue manufacturing and are prepared promptly to furnish Tyson freezers and parts and supplies therefor, maintaining the established standard and quality of product.

We also are alone authorized to fill orders for parts, repairs and supplies for Tyson freezers and are perpared to do so promptly and at reasonable prices.

THE H. H. MILLER INDUSTRIES CO.

If You Want a Freezer Quick— Wire for the Fort Atkinson!



NHE great popularity of Fort Atkinson Horizontal Ice Cream Freezer has for the past two years made it impossible for us to fill all orders promptly, We have now caught up with orders and have a small stock of machines in our various warehouses. While these will not last very long, we can make immediate shipment if your order is received in the next few days.

Authorities agree that the demand for ice cream will be greater than ever during the coming season. Be sure you have freezer capacity to take care of an increased demand. Be sure your freezers will stand up throughout the season.

The design of the dasher in the Fort Atkinson insures a fine grained, silky cream, it makes the freezer a quick emptying one, and enables the operator to perfectly control the overrun. The patented brine valve prevents all waste of brine and keeps brine pressure uniform. The Fort Atkinson is built overstrong wherever strength is needed. It will give lasting service under severe working conditions. Can be supplied with either aluminum painted base or white vitrified porcelain enameled base. Fully described in booklet "Modern Ice Cream Freezing" sent free.

THE CREAMERY PACKAGE MFG. COMPANY

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SALES BRANCHES-(Write to nearest one)

Chicago, 61-67 W. Kinzie St. Philadelphia, 1907 Market St. Buffalo, N. Y., 131-137 E. Swan St. Portland, Ore., 6-8 N. Front St. Kanasa City, 1408-16 W. 12th St. San Francisco, 6-59 Battery St. Minnespolis, 318-326 Third St. N. Toledo, 119 St. Clair St. Omaha, 113-115-117 S. Frent St. Waterloo, 406-1, Sycamore St.

Ire Creem Makin Refrigerating Syst Dairy Machiner and Supplies

Cultivate That Impulse

Provide a perfect package and change the impulse into a buying-habit.



Here's the Perfect Package that Stimulates Carry - Home Sales.

Even the most fastidious are no longer adverse to carrying ice cream home when the cream is put in Sealright Containers. In fact, people like to carry these neat, attractive, sanitary and safe containers. Ice Cream keeps in perfect condition and there is no danger of dripping or leaking.

Filled direct from the freezers or at the fountain

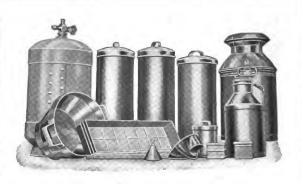
Order Thru Your Jobber, Write Us For Samples.



SEALRIGHT COMPANY, Inc.
FULTON, NEW YORK



Largest Manufacturers in the World of Paper Containers.



QUALITY SERVICE



Keiner-Williams Stamping Co. 8746-82 123rd (Vine) Street Richmond Hill, N. Y.

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THE ICE CREAM TRADE JOURNAL

Vol. XVII

No. 6

A PRACTICAL
HELPER
FOR
ICE CREAM
MANUFACTURERS
AND A
CHRONICLE
OF TRADE EVENTS



Official Organ of

The Association of Ice Cream Supply Men.
The Ass'n of Ice Cream M'I'rs of New York State.
The Association of Ice Cream M'I'rs of Pennsylvania.
The Ohio Association of Ice Cream Manufacturers.
The Indiana Association of Ice Cream Manufacturers.
The Association of Ice Cream M'I'rs of Maryland.
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Virginia Ice Cream Manufacturers' Association.
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Minnesota Association of Ice Cream Manufacturers.
Illinois Association of Ice Cream Manufacturers.
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Illinois Association of Ice Cream Manufacturers.
Annual Association of Ice Cream Manufacturers.
Illinois Association of Ice Cream Manufacturers.



Canadian Association of Ice Cream Manufacturers.

JUNE, 1921

PUBLISHED MONTHLY BY

THOMAS D. CUTLER 171 MADISON AVE. NEW YORK

TWO DOLLARS







For COFFEE ICE CREAM

Use

THE OLD RELIABLE

Arabian Coffee

Flavor

It has stood the test for many years

D. ABELSEN & SON, PROVIDENCE, R. L.

Successors to ABELSEN & SCOTT

HUDSON'S

FAMOUS

Ice Cream Flavor

Vanilla and Tonka Blend No. 52 Special

Finest Flavor Made

WE WISH TO CALL YOUR PARTICULAR ATTENTION TO OUR HUDSON'S ICE CREAM FLAVOR VANILLA AND TONKA BLEND NO. 52 SPECIAL (all Vanilla with a small per cent Tonka), a piece of goods which is especially adapted where Ice Cream is made for commercial purposes and shipping. The Flavor positively will not freeze out. Where Condensed Milk, Homogenized Cream or Pasteurized Milk is used it takes a very strong flavor to get satisfactory results and overcome the condensed or powdered milk taste, and Hudson's Ice Cream Flavor Vanilla and Tonka Blend No. 52 Special is especially adapted for this purpose. The small percentage of Tonka blended with the all Vanilla causes the extract to retain its fruity flavor when exposed to freezing.

TONKA BEANS, ARE VEGETABLE JUST THE SAME AS VANILLA BEANS, and just as pure and wholesome, and, best of all, Vanilla and Tonka will give the desired results at half the expense.

Put up in 10-gallon kegs, half barrels and barrels only.

10-GALLON KEGS\$5.50	Per	Gallon
HALF-BARRELS 5.25	Per	Gallon
BARRELS 5.00	Per	Gallon

Unequalled for the Ice Cream Manufacturer. One and one-half ounces give a mild, rich flavor, and two ounces a high flavor to what will make a 10-gallon batch of Ice Cream.

Let us send you a sample package, freight prepaid, to your city. You may return same at our expense if not entirely satisfactory.

Ice Cream makers who are looking for profit and reputation are using our Hudson's Ice Cream Flavor Vanilla & Tonka Blend No. 52 Special only.

The Hudson Manufacturing Company



(INCORPORATED)
Gabe S. Wegener, President

Vanilla Products

119-121 North Union Ave., CHICAGO, U.S.A.

Branches:-- Vera Cruz, Mexic

Windsor, Canada

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n Francisco, California

A Preferred Flavor In a Million Homes



Mapleine is the favorite flavoring with maple loving people and used extensively in a million homes.

Manufacturers who include Mapleine with their list of flavors find it their best selling ice cream next to vanilla.

Mapleine

As a flavoring in ice cream, Mapleine is ideal. It will not freeze out and holds true-a perfect maple-no matter how long the ice cream is stored.

16c to 20c flavors 10 gallons Mapleine Ice Cream which makes it more profitable even than chocolate.

Convince yourself. \$3 brings a quart bottle for trial.

Crescent Manufacturing Co.

SEATTLE, WASH.

105 Hudson Street, New York City

M-756

CUSTARD FLAVOR

For Ice Cream

Ninety-two per cent of trial orders mailed throughout the country has brought in substantial stock orders.

The rich color of the Egg combined with the delicate and precise flavor of MOTHER'S Custard pies is reproduced in making a delicious Custard Ice Cream of quality distinction.

Working sample for a 40 qt. stand—36c or 11/2c to flavor and color one gallon of cream when purchased in 5-gal, lots.

Acme Bisque, Shelbark or Walnut Flavor Working Sample for a 40-quart Freeze, 60c

Concretes of all flavors

Non-alcoholic Extracts

Acme Extract & Chemical Works Hanover, Pa. Branch: Toronto, Canada

OWNEY'S

Bulk Cocoa

(in Barrels)

Liquor Chocolate

for Ice Cream Manufacturers, Bakers, Lunch Rooms, Restaurants, etc.

Cocoa Powder Cocoa Butter

The Walter M. Lowney Co. BOSTON, MASS.

545 WILL REWARD BUYERS



MANUFACTURED BY COMPANY

THE TISCO COMPANY

WM. M. BELL, President

CHICAGO, U.S. A.

Original Manufactures of VANISCO, MAPLEISCO, RO.
MAN PUNCH, VAN-ELL FLAVORS, FRUIT CONCEN.
TRATES, MASS FLAVORS, EMULSIONS, TISCO FURE
FOOD COLCAS.

The Rush

There's a Reyam Brand Item for Every Ice Cream Requirement

At Prices That Are Lower Than Before the War

1921 will be the banner high-grade fancy ice cream year in history—early indications make this certain. To get the most business, use the best materiais-choose from the following list of specialties.

TUTTI-FRUTTI, mixture.

CRUSHED PINEAPPLE, sweetened or unsweetened.

ORANGE PINEAPPLE, a delicious product.

COCOANUT FRUIT SALAD.

"WHOLE-AND-BROKEN" MARAS-CHINO CHERRIES, packed in all size containers.

1921 Crop Cold Pack Strawberries Now Ready

Most Complete Line of Glace Fruits on Market.

Extracts for Ice Cream

Here are the flavors that will win and hold business for you: Sherbet

True Strawberry Roman Punch Maraschino

Wild Cherry her wholesome and delicious extract flavors on request.)

To convince yourself of Revam Brand Merit and Irresistible prices, write us today for samples

If interested in a money-making idea, secure our jobbing proposition for your territory on 1/2 gal. and gal. Fruits and

Syrups.

THE CINCINNATI EXTRACT WORKS

422-424 W. Fourth St., Cincinnati, O. Canadian Office and Representative, Walter S. Bayley, 20 Front St., E. Toronto, Canada.

For Over 20 Years

We have *specialized* on Vanilla Extracts and Vanilla Compounds

We Can Improve Your Flavor and Save You Money

Proprietors of "VANOLEUM". The Original concentrated vanilla flavor. We warn the trade against worthless imitations having similar sounding names claiming to be "the same as Vanoleum"

Corrizo Extract Company

211-215 West 20th Street New York, N. Y.



Scott's Coffee Flavor

101 Vanilla

REALIZING that the only sure foundation for a permanent business is merit in the products offered and delivered, I am devoting my best efforts and matured experience to the production of flavoring specialties to be sold strictly on their merits—flavoring specialties which are exactly as represented and which must satisfy the buyer before the sale is complete.

B. B. SCOTT
24-26 Ormsbee Avenue, Providence, R. I.



PURE VANILLA EXTRACT

Write for Booklet "VANILLA"

ATLANTIC IMPORTING CO. 617-623 Eleventh Ave., New York

${\sf Van\text{-}Mul}$

The King of Ice Cream Vanilla Flavors

Made Mexican Beans and Fortified WILL NOT FREEZE OR COOK OUT

1/4 Oz., 7c. Flavors, 5½ Gal, Mix of Ice Cream 3 Drams, 10c. Flavors, 100 Pounds of Candy

3 Drams, 10c. Flavors, 100 Pounds of Candy

Price Per Pint

Packed Free Fin 1 Pint Bottle . . \$5.00 5 " " (30 Pts.) . . 4.25

Order Now.

Guaranteed to please or money back.

DOWNEY-TURNQUIST & CO.

Manufacturing Chemists and Importers

Manufacturing Chemists and Importers

Makers True Fruit Extracts
SODA WATER FLAVORS

537 N. Dearborn St. CHICAGO. ILL.

Price is a relative term

Quality a concrete fact—

Vanilla Isolate

a pure vanilla, of highest quality, is of such Concentrated Strength, as to make the price a source of satisfaction.

Unrivaled Quality Profit-producing Price

Give us your address and we'll give you the details.

FOOTE & JENKS

Expert Flavor Specialists Jackson

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GENUINE FRUIT EXTRACTS

VANILLA AND ALL OTHER FLAVORS AND EMULSIONS

Atlas Certified and Atlas Vegetable Colors and No. 40 Carmine

MANUFACTURED BY

11-13 E. ILLINOIS ST. CHICAGO H. KOHNSTAMM & CO.

83-89 PARK PLACE

First Producers of Certified Colors

"Give Me Caramala Ice Cream

Never add any other flavor or color to Caramala for Caramala Ice Cream.

PRICES. Less than 5 gals., \$7.00; 5 gals., \$6.75; 10 gals., \$6.50; 25 gals., \$6.25; 50 gals. and

over. \$6,00.



Reg. U. S. Patent Office.

Pure Food Product, guaranteed under all Federal and State Food Laws. It is not an imitation of caramel or burnt sugar flavor. It is a new, distinct and better farer

119

16

CARAMALA is now virtually universally known throughout the United States and Canada, and its users are enjoying an ever-increasing CARAMALA business, embracing also its manifold combination uses.

CARAMALA MERIT is recognized by ice cream manufacturers not alone in Caramale flavoring value, as evidenced by the instant and sustained CARAMALA response from the public, but also in the CARAMALA physical improvement in CARAMALA ICE CREAM, or any ice cream in which CARAMALA is present, even in a less amount than the full flavoring requirements, as in CARAMALA NUT ICE CREAM, CARAMALA ICE CREAM PUDDING, etc.

CARAMALA, a fluid, requires neither waiting nor preparation.

CARAMALA ICE CREAM is always the smoothest and most firm ice cream in comparison with any other ice cream made from the same stock mix, and hardened under identical conditions.

Directions:-Use one ounce CARAMALA to each gallon in your mix, or full four ounces for ten gallons of CARAMALA ICE CREAM.

Send in your trial order, and if any CARAMALA claim we make is not sustained by our CARAMALA experience, simply return us the shipment within 30 days, at our expense. We make this offer on account of our certainty of your satisfaction, but we want you to feel positive assurance in sending in the trial order.

CARAMALA signs commensurate with order size supplied on request, as well as CARAMALA recipes.

Order direct or through any of the following well-known firms:

HAZELWOOD CO., LTD. ... Spokane, Wash, RICHARDSON & HOLLAND, Inc. Seattle, Wash, MANNING MFG. CO. ... Rutiand, Vt. W. L. KNORR CO. ... Pittaburgh, Pa. MANNING MFG. CO. Rutand VI.
W. L. ENORR CO. Plitaburgh, Pa.
HEATH & COMPANY Wilkes-Barre, Pa.
CHERRY-BASSETT CO. Baitimore, Md.
CHERRY-BASSETT CO. Philadelphia, Pa.
FERRIS-NOETH-STEEN CO. Baitimore, Md.

Use the New Concentrate Eliminating All Waste

NEW MEXOCINE

Bean Vanilla, Vanillin, Coumarin and Tonka Flavors

IT IS ECONOMICAL

Use quarter ounce or dessert spoonful to flavor 10 gal. batch Ice Cream. Use quarter ounce or dessertspoonful to flavor 100 ib. batch candy. \$7.90 per pint

5 pints \$6.75 per pint 25 pints 6.25 per pint TERMS: 2% 10 DAYS 10 pints \$6.50 per pint 50 pints 6.00 per pint

Why pay for unnecessary atochot when it is absolutely worthless from a flavoring standpoint? Why pay freight on water?

Samples on Request

REX EXTRACT CO.

ONLY TO THE STORY OF THE STORY

257 Pacific Street

Brooklyn, New York City

Folks Eat Ice Cream Because They Like It They Don't Like It and Don't Eat It —Unless the Flavor Is Right

MAYBORN PRODUCTS ARE RIGHT

MAYFLOWER

Ice Cream Flavoring \$2.75 Per Gal. BBl. Lots \$2.50 Per Gal. 5 BBl. Lots



VAN-COM-TON

Ice Cream Flavoring
Unusually Mature
\$3.50 Per Gal. BBl.
\$3.25 Per Gal. 5 BBl.

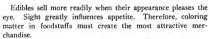
Scientific methods apart from those heretofore employed insure a finished product which retains the Full Strength, Bouquet and Aroma of the raw material. An uncommon result in the business but the rule with Mayborn Products.

Send for Trial TIB MAYBORN FOOD PRODUCTS CO. ARE YOU barrel Price CLEVELAND. ONIO. ACQUAINTED?



Certified Food Colors

Bulletin No. 5



"National" Certified Food Colors have strength and brilliancy.

To get the full sequence of our story, write for preceding bulletins.

For your protection, all
"National" Certified
Food Colors are sold
in Sealed packages.

National Aniline & Chemical Co., Inc.
Certified Food Colors Division 21 Burling Slip, New York

Akron Chicago Charlotte

NATIONAL QUALITY





Warner-Jenkinson Co.

St. Louis

Manufacturers of Ice-Cream Makers' Supplies and Certified Food Colors



Are you using

Red Seal Milk of Orange

for flavoring your orange ices? If not, you are missing out on a good thing. One to one and a half ounces in ten gallons of finished product does the work. Easy to use. Very economical.

Are you using

Red Seal Giant Vanilla

for flavoring your Vanilla ice cream? If not you are again missing out. "Giant" is all that its name implies. The only thing small about it is the price.

Are you using

Red Seal Purity Powder

for stabilizing your mix? If not, you don't know what good ice cream is. You can cut down on Condensed Milk when using Purity and obtain an altogether superior product.

Are you using

Red Seal Certified Colors Red Seal True Fruit Extracts Red Seal Marshmallow

If not, read

THE BOTTLER'S AND ICE-CREAM MAKER'S HANDY GUIDE

It tells you all about RED SEAL GOODS and how to make quality ice cream.



Warner-Jenkinson Co.

St. Louis



Q

The Value of a Line

Sugars vary in grade and variety—and quality. In our line, the largest in the world—there are over half a hundred grades and varieties of cane sugars. From these, you can choose exactly the sugar that definitely and best fits your needs. Just a slight variation in sugars may mean a great saving to you in production costs, or a big increase in quality. Our experts will gladly confer with you.

American Sugar Refining Company

The Most Complete Line of Sugar in the World

WILL NOT FREEZE OUT

NO ALCOHOL

VANILLA EXQUINTA

TRADE MARK

Finer, Stronger and Better Than VANILLA EXTRACT

ECONOMICAL

PURE

Write today for prices and particulars

CROWN FRUIT AND EXTRACT CO., Inc. 418-420 W. BROADWAY :: NEW YORK CITY

"TALBO"

THE PERFECT STABILIZER
FOR ICE CREAM

TRIED, APPROVED AND USED BY THE ICE CREAM TRADE FOR THE PAST SIX YEARS

Richo Karaya

THE PUREST OF PURE GUM DIRECT FROM MILLERS TO CONSUMERS

WRITE Us

F. E. RICHARDSON & CO.

114 JOHN STREET

NEW YORK CITY

RIPPEY'S Powdered Foamoline

(TRADE-MARK REGISTERED)

Specially Prepared

Specially Prepared

ICE CREAM

Sherbets,

AND

Water Ices

POANOLINE IN A STATE OF THE PARTY OF THE PAR

Cives jour ler Create that smooth, relved appearance & test so much admired horror of ler Create and accountable if rich, or nmy farm No. Hent o Eggs required you at m pi mix Rippey Pow dero. Foamolin.

you simply mix Rippey's Pow dered Foam cline with the sugar white dry, add your cream or milh and R is ready for the Freezer.

FOR A LIMITED TIME WE WILL SEND BY MAIL, POST-AGE PAID, Full ½ pound on receipt of 25c. Also our Formulas for making lee Creems, Sherbets, Fruit Frosts, Water Ices, Soda Water Syrup from Canned Fruits, Mailed Free on receipt of name and address. Caution: Rippev's Powdered Foamoline is packed in one pound boxes with registered trade-mark and signature of William Rippey on every box. Never sold in bulk.

WILLIAM RIPPEY

No. 108 E. Second Street

CINCINNATI, O.

SUGAR



Safeguard Your Reputation



For perfect Ice Cream the sugar you use is as important as the flavoring.

Franklin Crown Granulated

makes certain .

A perfect mix Snowy whiteness The greatest sweetness

The Franklin Sugar Refining Company

"A Franklin Cane Sugar for every use"







Manufacturers of Pure Food Gelatines

Built on all the latest, up-to-date, labor saving lines to produce always a uniform article.

Our raw stock supplied by our owners assures this.

Our Grades are of the highest quality obtainable, clear to the point of transparency, sweet, free of odor, and guaranteed to comply with all state and national pure food law requirements.

Its use insures good texture and a smooth cream.

A trial order will convince you that these are the best grades of gelatine in proportion to price that can be secured.

ATLANTIC GELATINE COMPANY

Hill Street, Woburn, Mass.

New York Bal

Baltimore 1012 Union Trust Bldg. BRANCHES: Chicago Suite 510 118 No. La Salle St.

Atlanta 433 Healey Bldg. San Francisco Room 240, Hansford Bik. 268 Market Street



DELFT





Harold A. Sinclair, 160 Broadway, New York

Some of the REASONS WHY you will want DELFT GELATINES

No Objectionable Odor to

Requires Less Flavor to

Perfect Standardization

Purest as analyzed by the American Official Method

FREE OF SULPHUR DIOXIDE "Price is a relative term-quality always a concrete fact."

WHEN the cost of the best gelatine is such a small proportion of your total cost of manufacture, it does not pay to use inferior grades.

There is none so pure as Delft. Its freedom from sulphur dioxide and from liquefying and harmful bacteria improves the quality of your product.

Samples and prices sent on request.



Anna O. Sien

Middle-H estern Distributors ROCKHILL & VIETOR 80 N. Market St., Chicago, Ill. South-Western Distributors
BLANKE MFG, & SUPPLY CO.
214 Washington Ave., St. Louis, Mo.

Gelatine is the most efficient of all stabilizers for Ice Cream

VHITTEN'S GELATINES

Are Standard

STRENGTH. PURITY AND UNIFORMITY GUARANTEED

WHITTEN COMPANY

Main Office and Works

Woolworth Bldg. NEW YORK CITY

Winchester, Mass.

20 East Jackson Boul. CHICAGO, ILL.

Makers of good ice cream, whether large or small, have learned from experience that when they use our BOSTON

ELATINE

EXTRA A, EXTRA B, EXTRA B1, EXTRA B2, OR LJ

They have the finest Guaranteed Pure Food Gelatines obtainable at prices the manufacturers make right.

Let us submit to you working samples and quote prices on the above grades. Write to-day.

CRYSTAL GELATINE COMPANY

Branch Stores

121 BEVERLY STREET

BOSTON, MASS.

New York

Philadelphia

Chicago 3630 Iron St.

San Francisco





Ice Cream Decorations

featuring
JUNE WEDDINGS and
FOURTH OF JULY
LEAVES, W/STEM-LACE PAPERS
FANCY PAPER CASES
ICE CREAM MOULDS
(Imagerted and Demestic)

(Imported and Domestic)
IMPORTED FRUITS, PULPS, JUICES,
ETC.

SCHALL & CO.
81 Barclay St., 16-18-20 W. Broadway
NEW YORK

YOU have the machinery to make good Ice Cream

WE have the machinery to sell it

IVAN · B · NORDHEM COMPANY

Advortising and Solling Service
for Tco Croam Manufacturers
8 West 40 "Street . . Now York City



Havaggone

makes the ice cream more enjoyable—makes ice cream profits bigger.

Havecone is crisp and tasty—not just a tough, leathery container that is thrown away.

It is pure cake, delicious to eat and baked all through, each one alike in flavor, in appearance, in thickness—and always keeps fresh and crisp!



Guaranteed to contain no grease, coloring matter or preservative.

A quality product for quality ice cream-costs no more-pays better!

Improved packing that prevents breakage. 100 to a box—10 boxes to a shipping container. Display card in four colors in each container.

Send for prices and samples.

CONE COMPANY OF AMERICA

Third Street and Van Alst Avenue

Long Island City, N. Y.

MI-SA-CO BRAND

Fresh Made—SPRAY MILK POWDER—Ask for yearly contract
Fresh Made—BARRELED CONDENSED MILK—Skim or Butter Fat
Fresh Made—GALLON SIZE EVAPORATED MILK—

Our Factories | Brighton, Mich.—Lockwood, O.—Springboro, Pa. Clio, Mich.—Cortland, O.—Jamestown, Pa.

MILK PRODUCTS SALES CO., Engineers Building CLEVELAND, OHIO

Are you using the Textor Recip



Ingredients:

8 quarts of Fresh Rasp-

35 lbs. Sugar

5 ounces Textor

Juice of 3 dozen Lemons Water sufficient to make

The method of procedure should be as follows:

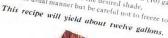
- 1. Mix the Textor with one-half of the sugar (17): lbs.) dry.
- 2. In a mixing can place about three gallons of water.
- 2. In a mixing can prace amount three gamons of water.

 3. Slowly pour the mixture of Textor and sugar into the water. Slowly pour the mixture of Textor and sugar into the water, stirring constantly as it is added and be sure Textor and sugar
- 4. Crush raspberries in balance of sugar (171/4 lbs.) until you have a smooth, even mass.

 5. Add the crushed raspberries to the mixture of water, sugar and
- 6. Now add the juice of 36 lemons.

UMPERT & CO.

- Now and the functor so remons.
 Now add sufficient water to make a total of ten (10) gallons. 8. Add sufficient color to give it the desired shade.
- Assus summers conor to give it the desired smale.
 Freeze in the usual manner but be careful not to freeze too hard.





make water-ices that dealers can repack repeatedly until every last bit is sold. To make water-ices

T the recent convention in Atlantic City, a well-known manufacturer said: "We must

make water-ices and sherbets more attractive to the public by

giving them a greater variety of flavors and getting them up in

The conversation inspired the per-

fection of "Textor" - a stabilizer which makes water-ices that will keep for weeks without a sign of

icy crystals, or separation, or water-ing down. With "Textor" you can

new ways."

more tempting And to provide that variety of flavor and novelty of form that is so essential to the development of the sherbet and water-ice industry,

we have prepared the Textor Book of Recipes

Write for your copy today

S. GUMPERT & CO. BUSH TERMINAL

BROOKLYN, NEW YORK

S.GUMPERT & CO.

Dia and by Google

The Sky is the Limit to Ice Cream Consumption!

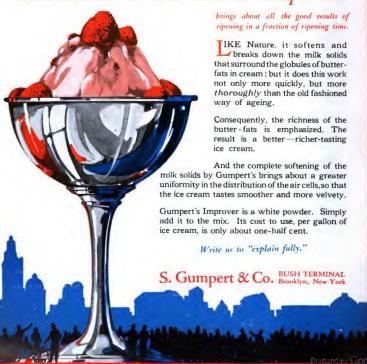
The better ice cream you make, the more you'll sell!

THERE'S a city that has a nation-wide reputation for ice cream excellence. That city has the greatest per capita consumption of ice cream in the United States. And what's more, we ship more Gumpert's Ice Cream Improver into that city than into any other. Draw your own conclusions!

It has been proven time and again that the amount of ice cream eaten by a community can be doubled or even trebled in a few years.

So, the surest way to build a bigger ice cream business is to make a *better* ice cream. And the way to make better ice cream is to use Gumpert's.

GUMPERT'S Ice Cream Improver









he NEW MILAREN REAL CONE PULL PROTECTE BY UNITED STATE MILES THE PROTECTE BY UNITED STATE MILES THE

In this New McLaren "Real Cake" Cone we offer the trade a sugar-sweetened article that is in a class by itself.

It is scientifically designed to ship with a minimum amount of breakage, is distinctive in appearance, and at the same time possesses the superior eating qualities that have always characterized McLaren's Ice Cream Cones.

EXCLUSIVE FEATURES

1 - Smoothly Moulded Ring Around Top. Strengthens 10p of cone.

Prevents breakage when filling with ice cream. Improves appearance.

2—The Name "McLAREN" Moulded in Rim of Cone.

Prevents imitation. Guarantees quality.

3-Breakage Protection Ring.

Prevents wedging action of cones in shipping.

Keeps them from splitting and sticking together.

Strengthens top of cone.

(Illustration shows how cones rest entirely on this ring. Walls of cones do not touch.)

This new Cone is the result of years of study and the investment of many thousands of dollars. The manufacturers have aimed to make the very best cake cone possible, and at the same time keep the price within easy reach of every retail dealer.

A high-grade "Real Cake" Cone, designed to stop the Breakage Evil. Priced extremely low. Try a sample shipment.

MSLAREN PRODUCTS COMPANY

Western Distributing Station, Kansas City, Mo.





SOUTH AFRICA USES MERIDALE MILK POWDER



Ouegadougou, Haute Volta, French West Africa. Via Dakar Senegal, March 10, 1921.

Via Dakar Senseal, AVER & McKINNEY, March 10, 1921. New York, N. Y. am sending you assual box of your powdered milk, which I purchased from you some sixteen the shipment that was mad at that time. Truly your powdered milk has been a over twelve hundred miles to the far interior of Africa, the thing that the milk has stood the two extreme climatic conditions of Africa's west coast. The one, months of parching heat, and it is still in good condition and we are using it on I can highly recommend your powdered milk especially for its conservative power, those quality wholesons and animal consequence of the conservative power.

as wall as to the tione qualities.

Yours respectfully,

(Signed) Rsv. H. M. Wright

AYER & McKINNEY

39 S. Water Street, Phila.

541-543 W. 22nd Street, New York

Manufacturers of Whole and Skimmed Milk Powder of Quality

Jos Middleby, Jr., Inc., 327-247 Summer St., Boston, Mass.

Helmes-Carpenter Dairy Products Co., 718 N. 14th St., St. Louis, Mo. Savage & Redavats, Jacksonville, Fia.

Southern Representative

C. Gibson Ford, 1012 Union Trust Blidg., Baltimore, Md.

"BEST"

EVAPORATED MILK IN GALLON CANS

Manufactured Especially For

Ice Cream Manufacturers' and Confectioners' Use

FINEST OUALITY

The beautiful flavor of the fresh milk concentrated and absolutely preserved in the air-tight can

NO SPOILAGE

NO WASTE

TWELVE YEAR REPEAT ORDERS OUR BEST REFERENCE

NO PROFITEERING WRITE OR WIRE

AVISTON CONDENSED MILK CO., AVISTON ILLINOIS

The

Ice Cream Supply House

offers you:-

A complete stock of the best quality goods procurable.

The satisfaction of real service.

Johnson's absolute guarantee.

An example:

Hajco Evaporated Milk



This product is made from fresh milk that is brought to the plant daily and inspected by dairy experts.

It is evaporated, sterilized and packed under the most sanitary conditions.

The finished product is the highest grade evaporated milk on the market. And fifteen years experience manufacturing confectioner's size evaporated milk assures uniformity.

You can be sure of a supply when you need it by placing an order with us covering your season's requirements.

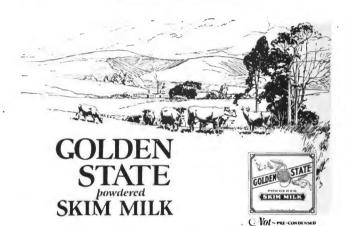
H. A. JOHNSON CO.

221-227 STATE STREET BOSTON

NEW YORK



PROVIDENCE



Because it is always dependable in quality GOLDEN STATE powdered skim milk will help you to make better ice cream.

It is made in big sunlight factories in the heart of the best dairy sections in California, where the milk supply comes from within a six miles radius.

It is not pre-condensed. Our own patent process keeps the fresh milk flavor. From the dryers to the final container it is blown through sterilized pipes. The Golden State label on the barrel means that a representative sample of the contents has passed our laboratory tests.

National distribution and constant demand insure a fresh supply for you. Bakers, confectioners and ice cream manufacturers who have tried other milk powders, both foreign and domestic, demand Golden State because they know it is clean, convenient and economical in use.

For price and further particulars write us today.

CALIFORNIA CENTRAL CREAMERIES Inc. 277 BROADWAY. NEW YORK CITY

425 Battery St., San Francisco

740 Terminal St., Los Angeles

BUY

Your Bulk Condensed Milk and Skimmed Milk Powder

FROM US

We carry stocks of both of these products in practically all of the large cities in the country and are therefore in an exceptionally good position to take care of your wants.

Boner & Company

PRINCIPAL OFFICE:

608 So. Dearborn St., Chicago, Ill.

NEW YORK OFFICE:

1270 Broadway, New York, N. Y.

We Make Prompt Shipments of

Plain Condensed Milk

Concentrated Milk

Sweet Cream

Barreled Sweetened Condensed Milk

GIFFORD & CULLUM

QUALITY AND SERVICE

413 N. State St., Chicago, Illinois

FRATERNAL EMBLEMS Cassell Center Molds



Blue Lodge Emblem \$3.35 Each.



Shriners Emblem \$2.70 Each.

Order from your jobber or

W. W. CASSELL

INDIANA

CAR LOTS or LESS For immediate use STORAGE

HOMOGENIZING

BRYAN-DUVALL

General Offices 105 Hudson Street NEW YORK Warehouse and Cold Storage

179 Franklin Street

- PHONE WIRE -- WRITE -

An Inducement to the Ice Cream Trade



The abnormally low cost of the last shipment of California Redwood en-ables me to sell to the ice cream trade the cabinet shown above at a great reduction in price.

> Get my price and specifications before buying your enbineta.

HENRY SHULTZ OFFICE AND FACTORY

24-26 Cherry Street, New York, N. Y.

Brooks Cabinets



Are constructed entirely of wood; best grade Gult cypress for outer case and white cedar for inner compartments or tubs. Two scientifically treated by secret process making them absolutely water-tight. Cabinets insulated with granultated cork. Drain pipes and faccets of best brank. Saves almost 65 per cent, of ice, she and an index of the comparison of the control of the control

BROOKS CABINET CO.

1000 Block W. 27th St., Norfolk, Va.



After I Sell 1000 Gallons Per Day

each additional gallon is almost half profit," says a shrewd, aggressive ice cream manufacturer.

Ice cream manufacturers in every section of the country are cashing in on well planned publicity; publicity that brings bigger orders and makes retailers anxious to sell their product.

MATHEWS PUBLICITY SELLS ICE CREAM

That is the one and only reason why you should advertise. That is why hundreds of the most successful ice cream manufacturers are building their advertising and sales plans around our service.

Our representatives visit every city in the United States and Canada. There may be one near you today.

Write us now and let us tell you how we can co-operate for bigger Ice Cream Sales.

Be sure to visit us at the National Dairy Show — Spaces 188-189



FREDERICK C. MATHEWS COMPANY
"SERVANTS TO THE DAIRY INDUSTRY"

P. O. BOX 834 DETROIT, MICH.

This insert was produced complete by the Frederick C. Mathews Company



Let Mathews Tempters

Lead the Crowds To the Fountains That Sell Your Ice Cream

Mathews reproductions are the work of the best commercial artists in America in competition to give you most appealing ice cream illustrations obtainable.

You or Your Competitor will use Mathews Publicity

The first to act will be the one to get the exclusive right to use these sales builders in your town. Write today.

We will be at the National Dairy Show -Will You?



FREDERICK C. MATHEWS COMPANY

"SERVANTS TO THE DAIRY INDUSTRY"

P. O. BOX 834

DETROIT, MICH.

This insert was produced complete by the Frederick C. Mathews Company





"A Doses Obbinets or a Dosen Carloads"

... MILWAUKEE.WIS.



means what the words imply. "De-livery within 24 hours during the rush season. Give us a chance to prove It.

Stout Crate Co. . 373 Broadway

Milwaukee Wis.



True Economy

WALNUT ST BRIDGE

It is sometimes difficult to determine just what is true economy but not in the case of ice cream cabinets.

Here true economy lies in the ice conserving factor and the ability of the cabinet to stand constant usage over a long period of years. It is these attributes which have won for Grand Rapids Cabinets their high standing in the trade.

Manufacturers who furnish their customers Grand Rapids Cabinets have the satisfaction of knowing that in this particular matter they have done their utmost in the way of service.

GRAND COMPANY

82-84 Alabama Street. N. W., Grand Rapids, Mich.

New England Sales Office and Warehouse Merrow Bros., Inc. 44 N. Market St., Boston, Mass. South Eastern Sales Office and Warehouse Cherry-Bassett Co. 33 So. Charles St., Baltimore, Md.

North Western Sales Office and Warehouse
A. C. Black
515 Lumber Exchange, Minneapolis, Minn.



And add to your profit. Use the cabinet that saves on ice and is built to stand long wear.

Buy a cabinet for the service it will give you-get one that you know is of solid substantial construction; thorough efficient insulation; economical in first cost and long service.

"THE ECONOMY" Ice Cream Cabinet

is the choice of thousands because of its wonderful advantages. Made in mahogany and other finishes and coated with waterproof varnish. Insulation is finely graded granulated cork, protected by waterproof felt. Style in cut is Economy Tub Cabinet "T," a choice in many sections. Contains tubs of sturdy build. Cylinders are not essential, and are not included. Made in from one to four compartments, 12 and 20 quarts. The ever popular metal-lined cabinets, in standard sizes, also ready for shipment,



Write or wire for catalog and prices. Prompt shipment if you order at once

HOMER MFG. CO., Homer City, Penna.

The C. Nelson Ice Cream Cabinets (Patented)

C. NELSON BRICK CABINET Patented May 8, 1906



42 QT, BRICK CABINET WITH ICE RAIL Patents, May 8, 1906; Sept. 9, 1919





"Confessed the best when put to test"

The C. Nelson Patented Ice Cream Cabinets are especially adapted to Hot Climates
— South America, Honolulu, Philippines,
Cuba and all Southern States, where
others fail.

We've Got It On Them All

Because We Are:

- 1st. Specialists in the manufacture of Ice Cream Cabinets.
- 2nd. Have had 30 years' actual experience in the manufacture and keeping of Ice Cream, from which practical experience the Nelson Cabinet was evolved.
- 3rd. Nelson Cabinets are constructed of California Red Wood and White Cedar. Both sanitary and everlasting.
- 4th. For this reason they are proof against Rust, Brine, Leaks and Decay.
- 5th. They are Insulated with Granulated Cork, the best non-conductor of heat and cold known.
- 6th. They will save their cost in three months' service.
- They will keep Ice Cream in perfect condition 24 to 36 hours with one packing of Ice and Salt.
- 8th. They will last a lifetime.
- 9th. We manufacture Ice Cream Cabinets exclusively, and build but one grade—This we guarantee.

The 42-quart brick cabinet has a two-compartment container, thus giving the advantage of a double cabinet with single ice space,

ATTENTION

Responsible parties (particularly wholesale ice cream dealers) may order from 1 to 100 Nelson cabinets, place them in practical use, and after 30 days, if not entirely satisfactory, return at our expense for freight both ways.

CATALOGUE AND PRICES UPON REQUEST

C. Nelson Manufacturing Co.

23rd and Division Sts. S7

ST. LOUIS, MISSOURI

The EASTERN EXHIBITION 1921

in the service of the ice cream industry

The Association of Ice Cream Supply Men announces its Third Annual

Eastern Exhibition ELMWOOD MUSIC HALL BUFFALO - NEW YORK Oct. 31st to Nov. 5th incl.

An exhibition that yearly marks the progress of the industry. Reservations can be made at once at the Lafayette (hotel headquarters), the Statler or at other Buffalo hotels. An entire range of manufacturing and marketing essentials, from least to greatest, will be shown.

The Association of Ice Cream Supply Men
1328 BROADWAY
NEW YORK CITY



ICE CREAM



Increased Ice Cream Sales!

We can help you-Now

Progress is marked by stations left behind! Now is a good time to give a thought to your advertising for another year. The Burdick - Garrison Company's definitely "Planned in Advance" Advertising and Selling Campaigns help you to merchandise your Ice Cream, not simply to serve Ice Cream, but to actually sell it.

Remember, also, that we manufacture an unlimited variety of advertising materials available for immediate use. Cutouts—Fountain Hangers—Flavor Boards—Window Trims—Dealer Helps—Sales Stimulators and Metal Signs.

Write today for special designs and auotations

The BURDICK-GARRISON COMPANY

Two Twenty-five Tourth Avenue New York

Advertising Specialists to the Ice Cream Manufacturer

THE NATIONAL DISH



NATIONAL DAIRY SHOW

Minnesota Fair Grounds St. Paul and Minneapolis October 8th to 15th



When Good Fellows Get Together

Ideas for business betterment are exchanged. Inspiration for future years' work is obtained.

The National Dairy Show will give you ideas and inspiration in generous volume and will broaden your acquaintanceship and give you wholesome entertainment as well

Your Chance to Learn the Best Methods

The experts in all branches of the industry will meet at the Twin Cities during date that the training the latest methods of producing, manufacturing and distributing dairy products. All that they have learned is put at your disposal.

The Biggest Machinery Display Ever Gathered Under One Roof

Here under one roof is combined all that's best and latest in dairy equipment and supplies; machines that will improve your product and decrease your costs.

1000 Choice Dairy Cattle

The greatest collection of prize winning and grade dairy cattle ever gathered will be assembled at the dairy show. See with your own eyes the remarkable improvements which have been made with the various breeds, and bring your patrons to see the high producing cows.

The National Dairy Show means more to your success this year for cost and market information than it ever has in the history of your business.

A "MAKE IT PAY" IDEA

If a pleased customer is your best advertisement, why lose the advertisement nine times out of ten?

Tie Your Name to Your Product



Our tin ice cream spoons with your name stamped in the bandle cost no more—probably less—than you pay for the plain kind, and they tell the customer who pleased him ten times out of ten.

WRITE FOR PRICES AND A SAMPLE

Our New Ice Cream Catalogue Will be Mailed Upon Request



Freezers; tools; cans and carry-outs; brick moulds; brick tanks; tubs; buckets; and a hundred and one other things on which you can make it pay to let us quote you.

Weissue Catalogues of Baker's Gools and Vtensils and Confectioner's Gools and Vtensils.

THE MAAG CO.



OUALITY ECONOMY

PARA-PARCH

The Premier Ice Cream Paper

If you have not received our latest price list
—effective June 1st—quoting all standard
sizes, circles and squares, please advise us.

THE HENLE PAPER MANUFACTURING CO.
535-545 East 79th Street. New York City

THE GREAT "2A" The Perfect Ice Cream Flavor \$350 PER GALLON IN BARRELS

Order

your

barrel

now

from

Massey & Massey Co.

Expert Vanilla Chemists

1214-1216 Webster Ave.
CHICAGO U. S. A.

U. S. A.

THE ICE CREAM TRADE JOURNAL

Vol. XVII

NEW YORK, JUNE, 1921

No. 6

SUPPLY MEN ANNOUNCE EASTERN EXHIBITION

The Association Of Ice Cream Supply Men Will Hold Its Fifth Industrial Show Since 1919 at Buffalo, October 31 to November 5 Inclusive

Its third consecutive occurrence giving authority to its expectance as a future annual event, an Eastern exhibition of supplies, equipment and machinery has once again been announced for 1921, by The Association of Ice Cream Supply Men.

This year it is to be held in the Elmwood Music Hall, Buffalo, N. Y., the building in which important Buffalo concerts and many of its industrial shows are held. The building is at Elmwood ave. and Virginia 8x. a few minutes' walk or ride from the business center of the city. The dates are October 31 to November 5, inclusive.

The exhibition will be fully as large, if not larger than any of the four the association has hitherto held. The Elmwood Music Hall has a little short of 25,000 square feet of floor space, and the floor layout of the association allows for the accommodation of a possible 150 exhibitors. Members of the Association of Ice Cream Supply Men are now reserving booths, and any booths not taken by them, if there should be such, will be later offered to non-member supply houses. No exclusion of non-member houses is planned by the association, although the possibility of members occupying all the booths, experience with earlier exhibitions has shown, is always to be considered.

As in the previous exhibitions of the association, the entire range of manufacturing and merchandising essentials for ice cream manufacturers will be covered in the exhibition, by goods actually on display by working demonstrations or by models or adequate descriptions. In the variety of goods displayed the previous exhibitions have established themselves in the same relationship to the ice cream industry of the different sections of the country that the large automobile shows hold to the automobile industry.

The Lafayette has been designated official hotel headquarters by the association, and it is expected that visiting ice cream manufacturers will likewise make that their center. The Statler, a commodious hotel, is a few blocks only from the Lafayette and, like the Lafayette, is on a direct street car route from the Elmwood Music Hall, with cars leaving approximately every two minutes. Buffalo has ample hotel accommodations, either at the Lafayette and Statler or at other smaller hotels, for the more than 1,000 persons in various ways associated with the ice cream industry who are expected to register at the exhibition. Hotel managers, however, have notified the association that reservations should be made immediately if choice accommodations are desired.

No entertainment plans have yet been perfected for the exhibition, but the manner in which the association has leavened the business characteristics of previous Eastern exhibitions with social diversions will be followed to some extent, and advantage of the beauties of Niagara Falls will be taken. No conventions have formally been set for a meeting during the exhibition, but a large assembly hall is available for any meetings or conferences of ice cream men that may be wished. Nonminally-priced lunches will be served in the building by a caterer under the supervision of the exhibition management.

The exhibition will not be open after 6 P. M. on any day except one, an evening which will be devoted to the education of the Buffalo public in the magnitude and present methods of production of the ice cream industry. After adequate newspaper announcements the doors that evening will be thrown open to all interested visitors, who will be allowed the privileges of the exhibition for two hours.

The Eastern Exhibition will be the fifth industrial show held since 1919 in the continuance of the Association of Ice Cream Supply Men's policy of holding comprehensive displays of machinery, equipment and supplies for the convenience of ice cream manufacturers in different sections of the country. The previous exhibitions have been held in Philadelphia, St. Louis, Atlantic City and Portland, Oregon, two in the fall and winter of 1919-1920 and two in the fall of 1920. At some of these previous exhibitions

as many as 1,200 persons associated with the ice cream industry have registered at the door, and each of the exhibitors has drawn representative owners and managers of plants from areas of twenty or more states.

WHAT IS GOOD WILL?

Good will in modern business, is property, as actual positive, certain and genuine, as machinery and materials. It is the fruit of honest work, patient experimentation and expenditure of money in creating a market and efficiently serving the purchasing public. It is an estate, accumulated through a continuous policy of making every promise good and standing back of every product. It is a possession, acquired by such establishments as have held a public referendum and received a vote of approval.

Good will is the interest accruing from the rule of reciprocity, the belief that any transaction, resulting in injury to one party, is immoral. It is the asset, built up from no monopoly power, but through continual competition in a fair field and no favors. It is the cornerstone in the structure of truthful trade. It is the guaranteed link between maker and user. It is the sap and life of the tree of honest business whose roots are standardized quality and price.

Good will, once established, can defy every attack save that of the piratical price cutter. It can overcome the crafty deception of the substitutors with his "something just as good." It can protect itself against the counterfeiter who would steal registered trademark, label or brand.

But it is at the mercy of buccancer bargainers, who stash standard prices and set up "misleaders" in order to deceive the public. It is slaughtered by the "Kamerad" pistol in the hands of dealers who use it as bait to catch the unwary purchaser. It is destroyed by those who defraud the public on a hundred unidentified articles, through a bargain on one, whose quality and value is known to all.

Good will must be put in the keeping of those who have earned it, not left at the mercy of business pirates. No man is permitted to steal a purse, neither should be be permitted to rob an honest business of its good name for furnishing a standard article of uniform worth at uniform cost. No man may wilfully destroy a house, neither should he be permitted to destroy the very foundations upon which rests the prosperity of every firm which sells guaranteed goods to the public.

Good will belongs to the maker of the goods; he does not sell it, but is vitally interested in preserving it after the goods are in the consumer's hands. For the best interests of every part in the transaction, the user and distributor as well as the maker, there must be legislative provision by Congress that the manufacturer of standard, identified, trade-marked goods, whose quality and price have won the good will of the public, shall have power to protect it by enforcing a standard price policy in the marketing of his product—M. CLYDE KELLY, Congressman from Pennsylvania.

NATIONAL ASSOCIATION NOTICES

Depreciation

According to a ruling by the Committee on Anpeals and Review of the Bureau, there is no warrant for field agents to reduce earned surplus because of alleged failure to charge off sufficient depreciation in the past, unless the depreciable assets of the corporation are valued on its books at the beginning of the taxable year of an amount in excess of their actual value at that time. particularly true where the corporation in prior years earned positive income from which larger deductions for depreciation might have been taken, if in the opinion of the officers and directors of the cornoration such larger charges had been justified. This does not preclude the Income Tax Unit from adjusting depreciation, either by way of increase or decrease, where there is at hand affirmative evidence that as at the beginning of a taxable year the amount of depreciation written off in prior years was insufficient or excessive.

Section 252-Refunds

(While the following ruling appears to be for revenue collectors, still we believe it may prove of interest.)

Section 252, Article 1036: Claims for refund of taxes erroneously collected. 14-21-1555, O. D. 867

Where additional tax liability is discovered on the audit of a taxpayer's return for one year and a refund is found to be due him for a subsequent year, the procedure to be followed is to make an office adjustment to take care of the additional tax and advise the taxpayer to file a claim for refund of the net overpayment, noting on the returns of the two years involved that additional tax is due for one year which has been satisfied by an equal amount overpaid for a later year, also to note on the later return that an overpayment has been made, part of which has been applied against the additional tax due for the prior year and the balance lass leen refunded or credited or available for refund or credit.

Where additional tax has already been placed on assessment list, taxpayer will be required to file claim for credit in order to apply against additional tax a corresponding portion of the refund due him.

Committee On Tax Revision

The Committee on Tax Revision has had several conferences regarding a program to be prepared outlining the wishes of the Association in connection with the various bills now before Congress revising the 1918 Revenue Law.

The committee favors the repeal of Section 630 (which imposes the tax on ice cream, sodas, etc.), also the repeal of the excess profits tax, as well as some other changes in the revenue law.

This information will answer the numerous inquiries received in this office relative to the activities of our Tax Revision Committee.

Bulletin No. 46, May 10, 1921.

NATIONAL DAIRY SHOW NEWS Publicity Dep't Bulletins On Preparations Being Made For a Busy Week In the Twin Cities

The Committee of One Hundred, appointed by the business, financial, industrial and agricultural interests of the cities of St. Paul and Minneapolis, to get the most for agriculture for their country out of the National Dairy Show, to be held on the Minnesota Fair Grounds, October 8 to 15 next, broke into active cruption the second week in May.

Honorable J. M. Hackney, chairman of this committee, the personnel of which is made up of real men of the states at interest, in a preliminary move to clear the decks for action, called several meetings last week and invited the dairy show management and the Publicity Committee of the Machinery Men's Association to come up from Chicago for a conference, and there sure were some enthusiastic gatherings during the week.

The first meeting on Monday was with the local lumber interests, and the result was a call to be issued for a meeting early in June of the whole Northwest Lumbermen's Association to tie into the work of boosting the dairy show. The hotel men of the two cities held a meeting on Tuesday, May 17, and made joint plans for caring for the people and taking an active part in the successful carrying out of all promises made to the dairy industry to make the show historical. On Wednesday, May 18, a joint conference was held of the publicity committees of the civic and commerce bodies of the two cities, and plans were laid for active participation through advertising and publicity by the whole industrial life of the two cities. Thursday, May 19, the Committee of One Hundred came together to formulate plans for their activities, and the result was the formation of about fifteen sub-committees, each in charge of the active work to be performed in the interest of the show by the several interests represented; and on Friday. May 20, the railroad interests had a special conference on their part of the big work.

This all means that the National Dairy Show of 1921 will exceed all that have gone before, in point of interested attendance. It means also that the whole life of commerce and agriculture in the Northwest States recognizes dairying as the fundamental basis upon which its progress rests.

The inspiration that this show presents will hasten this progress, was the keynote of all the meetings; so that everyone doing his duty will make the dates of October 8 to 15 historical in the Northwest country.

The National Dairy Show this year will carry to the people of the whole country more potential and fundamental value than any previous show, and its service should be used to the extreme.

W. E. SKINNER.

National Ice Cream Convention

The twenty-first annual convention of the National Association of Ice Cream Manufacturers will be held at Minneapolis, Minnestota, on October 10, 11 and 12, 1921, during the week of the National Dairy Show. Headquarters will be at the Hotel Radisson.

The officers of the National Association, having in mind the fact that a convention must, above all things, be educational, have in course of preparation a program embodying subjects of greatest value of all ice cream manufacturers. There will be many things for you to learn by attendance at this convention—the difficulty in your mind may be the same as the other fellow has, and ample opportunity will be afforded all manufacturers to ask questions, to talk things over, and to "swap" ideas with fellow manufacturers, who may have some method or system in the conduct of their business that is the very thing you need in yours.

It is daily becoming a more and more recognized fact that it pays to work together, and at this convention you will meet the largest manufacturers in the ice cream industry, intelligent, friendly men, who are working hard to increase the total production of the industry and to keep it established on a sound, straightforward basis.

Bear in mind that it is the duty of each and every ice cream manufacturer to practice as well as preach the gospel of co-operation, and to work with the other memburs of his industry to raise the standards of producing and selling.

So come to this convention—and come with your mind made up to make it pay for itself in value received. Attend every session of the convention and do your share towards making it a big success.

Be sure to make your hotel reservations early Naturally you will want to be housed properly while at the convention. If you send in your reservation now this will be assured.

Publicity Committee Visits Twin Cities

The publicity committee of the National Dairy Association, represented by Messrs, Chase, of the Davis-Watkins Dairymen's Mfg. Co., Busian, of the DeLaval Separator Co., and Tompkins, of the Crawrey Package Mfg. Co., recently visited St. Paul and Minneapolis to confer with the publicity committee of the Chambers of Commerce of the Twin Cities and to gather data for a publicity campaign for the 1921 National Dairy Show.

They soon discovered that the Twin Cities were fully alive to the immense importance of the great show, both hecause of the good it would do their people and because they would have a chance to sell their wonderful country to visitors from all over the world.

The committee returned with their leads buzzing with statistics and were very enthusiastic over the outlook. Not only were they convinced that all dairy show attendance records would be broken, but they were convinced that the show management would not be able to fill the demands for exhibition space that would be made, even though the space where the show will be held—the new Cattle

Exposition Building at the Minnesota Fair Groundsis the largest building of its kind in the world.

The committee learned that hundreds of thousands of vacationists go through Minneapolis and St. Paul every year bound for one of the 10,000 lakes nearby, and it seems reasonable to suppose that thousands in the dairy industry will arrange to take their vacation in that country during dairy show time.

They learned that the Twin Cities are the industrial centers of a trade territory of 7,000,000 people, and that this great territory will send almost every man they have in the dairs, industry to the show.

The committee was told that the two cities have 29 railroads entering there, and although there are over a million acres of cut over land in Minnesota awaiting the plow and the dairy cow, even now it is the largest butter making state in the Union. The thousands of cool lakes, the wonderful and alundant grasses and the delightful elimate are conspiring to make this country one of the greatest dairy centers in the world.

Through the courtesy of the St. Paul Chamber of Commerce, Messrs, Chase, Busian and Tompkins were taken for a tour by auto under the guidance of Mr. Kantz, of the Chamber of Commerce. They visited all points of interest in the two cities and much of the surrounding country.

BUTTER PRODUCTION

Edison has publicly classed college graduates as useless because they could not answer correctly a series of questions compiled by him.

How many dairy men know where the bulk of creamery and farm butter of the United States is produced and where consumed? In compiling ansevers to this question the National Dairy Council has secured some very interesting and valuable material. United States Census reports, Department of Agriculture reports and information gathered from colleges, State Dairy Commissioners, and the general trade have been the basis for all compilations. No effort has been spared in making the work as accurate as possible. However, slight revisions may be made when the census reports are made final on farm butter by states.

In 1909 the farm butter of the United States totaled 994.650,000 pounds; creamery butter 624, 764,000 pounds. In 1919 farm butter had decreased 28 per cent. in volume, or to 710,000,000 pounds; that of ereamery butter had increased 39 per cent., or to 866,850,000 pounds.

Butter consumption in 1909 was 17½ pounds per capita. In 1919 the per capita consumption had decreased 15 per cent, or to 14.85 pounds per capita. By applying these average consumption figures by states, according to population, the heavy consuming area is found in the eight Eastern States, namely: Massachutestt, Rhode Island, Pennsylvania, Delaware, Connecticut, New York, New Jersey and Marvland.

This district is approximately equal in area to New Mexico, which has a population of only 360,-350. These eight Eastern States have a population of more than 30,00,000, nearly one-third of the entre population of the United States. The bulk of the population of this section is further centered on the coast area. Heavy market milk demands on local supplies in this thickly settled district result in a low creamery butter production of approximately 22,000,000 pounds. Their consumption of 441,000,000 pounds makes necessary the importation of more than 32 per cent. of their butter from the big creamery butter producing states. It will be noted that this total consumption of 441,000,000 pounds is more than one-half of the total creamery butter produced annually in the United States.

Our seven heaviest creamery butter producing and exporting states are as follows: North Dakota, South Dakota, Nebraska, Kansas, Minnesota, Wisconsin and Iowa.

They manufacture more than half of the ereamery butter made in the United States,

While the Southern States do not have a large number of dairy cows, this section manufactures more than oue-half of the farm hutter of the country. Their total make of creamery butter is less than 33, 600,000 pounds, or an amount equal to one-fourth the manufacture of the ereamery butter of Minnesota. All of the Southern States are importers of creamery butter, though not to as high a degree as the Eastern States, due to their lighter population.

Of the Northern States, Illinois, Utah, Wyoming and Montana import from seven to thirty per condition of their consumption of butter. Production of creamery butter varies by states in proportion to population, from the state of Minnesota, which produces 54 pounds to every person, to Georgia, where there are only .002 pounds manufactured for every person in the state.—R. McCANN, of the National Dairy Council.

RECORD SUGAR CROP

This country's greatest sugar crop was produced in 1920, according to final returns from producers of beet and cane sugar made to the Bureau of Crop Estimates, United States Department of Agriculture. The total is 1,266,148 tons and this exceeds the previous record erop of 1916 by 12 per cent, and the low production of 1919, a year of exceptionally unique production of 1919, a year of exceptionally unique production of 1919 and 1919.

Beet sugar has steadily advanced in production from the days when it was an experimental crop, with now and then a recession on account of weather. It first passed the mark of 1,000,000 tons in 1920, with 1,000,021 tons, or 86 per cent. of the sum of beet and cane sugar for that year. On the contrary, cane sugar has declined in production for about 15 years. The product of 1920 was 176,127 tons, a low but not the lowest quantity of the period of decline. About 28 per cent. of the 1920 cane aereage was devoted to producing cane for seed purposes.

Cane sugar production is confined almost entirely to Louisiana, but beet sugar production is widely distributed from Michigan and Ohio to California along a strip of country that has been called the sugar-beet helt.

EIGHT PER CENT STANDARD ADOPTED IN OHIO

Governor Recently Signed Bill Establishing Butter Fat Requirement For Ice Cream—Ohio Ass'n Presents Brief to Legislature With Endorsements Of Prominent Authorities

After considerable effort on the part of the ice cream manufacturers of Chio, the eight per cent. butter fat standard bill was passed and signed by Governor Davis. The original bill, the Kryder Bill, as originally written contained several objectionable features. It called for 12 per cent. butter fat without provision for other solids and along with other features it specified a weight of 5% lbs, per gallon.

This bill was introduced in the Senate and reported out without a hearing while the Ohio Daymen's Association and the Ohio Association of Ice Cream Manufacturers were in conference regarding a state standard for ice cream. At the same time there were two bills, namely, the Watts and Calvert bills in the House providing for a 10 per cent. butter fat standard.

The ice cream manufacturers demanded a hearing in the Senate Committee whereupon the Kryder bill was referred back to the committee but reported out in the original form, except that it modified the weight clause to 4th pounds per gallon weight and raised the license fee. The ice cream manufacturers proposed an amendment from the floor of the Senate reducing the standard to 8 per cent. with a 20 per cent, milk solids requirement. This was passed by the Senate but when sent to the House Committee it was amended raising the butter fat requirement to 10 per cent. This was then taken to the floor of the House and the 8 per cent, amendment was again passed but without the solids requirement. The bill was concurred by the Senate and sent to the Governor, who signed it on May 14. The eight per cent, standard becomes effective 90 days after it was filed on May 18.

The following statement setting forth the position of the Ohio Association of Ice Cream Manufacturers coupled with statements of medical authorities and others relative to standards was presented to the members of the House of Representatives of the Ohio State Legislature:

To the Members of the House of Representatives, Ohio State Legislature,

Columbus, Ohio.

Gentlemen:

This statement is intended to set out the position on Substitute Senate Bill 105, Mr. Kryder, of the Ohio Association of Ice Cream Manufacturers representing eighty ice cream manufacturers in the State of Ohio, and composed of representatives of the largest and smallest manufacturers in Ohio, who manufacture approximately 12,000,000 gallons of ice cream annually or about 90 per cent. of the production in the state.

The Kryder Bill is designed to fix a standard for ice cream and license manufacturers. Originally this Bill called for a standard fixing the butter fat content of ice cream at 12 per cent. and 10 per cent. in fruit, nut and egg ice cream. However, the Bill was passed unanimously by the Senate in which this fat content was changed to 8 per cent, and 20 per cent, by weight of total milk solids. This amendment was made on the floor of the Senate and was passed by a vote of 25 to 12. Following the passage of the amendment the 18il was unanimously passed with every member of the Senate voting. The Bill was then messaged to the House, referred to the Dairy and Food Committee who recommended an amendment to fix a standard for butter fat at 10 per cent, in ice cream and to eliminate the requirement as to solids content.

This Association is opposed to the amendments offerred by the House Committee and favors the standards fixed by the unanimous vote of the Scnate. A statement of the reasons for this position is briefly as follows:

Standards fixed by a Legislature are only minimum standards. The law does not and should not seek to fix a maximum standard for ice cream nor fix a standard for ice cream which would denrive a manufacturer of the right to individuality in his product for different classes of trade so long as the ice cream which he manufactures and sells is healthful, palatable, nutritious and made under sanitary conditions. A minimum standard does not prevent the manufacturer from putting out a higher standard of ice cream where trade and competition demand. The standard fixed by the Legislature is only the minimum standard below which ice cream cannot be manufactured for sale. In support of their position the manufacturers insist that ice cream with 8 per cent, butter fat and 20 per cent, total milk solids is a balanced ice cream, palatable, healthful and nutritious

This standard meets with the approval of some of the most eminent medical authorities on food and feeding in the country. Among the authorities approving a standard of 8 per cent, milk fat and 20 per cent. total milk solids, and disapproving of a higher standard, especially for consumption of children who consume a great part of the product, invalids and those of weak digestive ability, are Dr. Henry D. Chapin of New York City, former President of the American Pediatric Society; Dr. L. Emmott Holt of Columbia University, one of the most famous authorities on children's food; Dr. H. C. Gerstenberger, Cleveland, Professor of Pediatrics Western Reserve Medical School; Dr. I. A. Abt, Professor Pediatrics Northwestern University Medical School: the Columbus Academy of Medicine; the Cincinnati Academy of Medicine; the Academy of Medicine of Cleveland: the Montgomery Medical Society, and hundreds of city health officers, city chemists and individual doctors. The full text of the statements of authorities such as these mentioned is attached to this statement.

In addition 8 per cent, standard is approved by

Professor R. B. Stoltz in charge of the Dairy Manufacturing, Ohio State University; Professor J. F. Lyman, Professor of Agricultural Chemistry in Charge of Nutrition, Ohio State University; Faith R. Lanman, Head of the Department of Home Economics, Ohio State University, and Professor E. G. Horton, Assistant Professor of Medicine in Charge of Pediatrics, Ohio State University.

Moreover, this standard is approved by a great many producers and several producers organizations because it will more nearly consume all the constituents of milk than a standard of higher butter fat and a lower percentage of milk solids not fat. There is always a market for butter fat. There is not always a market for milk solids. Any increase in butter fat in ice cream means a corresponding decrease of milk solids not fat of which there is already a large surplus and the displacement from the market of these solids of already small value will render the value of milk to the producer less. Considering eleven million gallons of ice cream as a low estimate of the number of gallons of ice cream sold in Ohio in 1920, there are already 4,000,000 pounds of solids not fat existing as surplus on the basis of ice cream containing 8 per cent, fat and 20 per cent. total milk solids. To raise the butter fat standard to 10 per cent, and to fix no total solids requirement would increase this surplus not fat to over 8,000,000 pounds or to about twice as large a surplus as at the present time.

A higher hutter fat standard with a higher percentage of total milk solids would increase the cost of ice cream to the consumer, meaning a decrease in sales. The present is no time to increase cost of any commodity to the consumer. An increase of 2 per cent. of butter fat in ice cream would mean an increase of at least 10 cents per gallon manufacturing cost or an increase of \$1,100,000 per year on 11,000, 000 gallons. When this increased cost reached the consumer, through dealers, it would amount to at least \$1,500,000 a year.

Moreover, an 8 per cent. standard has been found to be practicable in large states. The following states reduced their standard when they found higher standards neither economical nor practicable. Pennsylvania reduced her standard from 12 per cent. to 8 per cent.; Missouri, 14 to 8; North Carolina, 14 to 8; Orcgon, 12 to 8; Kentucky, 14 to 10; In the neighboring states Indiana has 8 per cent.; Illinois, 8; Pennsylvania, 8 per cent.; West Virginia, 8 per cent., and Michigan and Kentucky 10 per cent. and New York has no standard. To raise the standard for Ohio above 8 per cent, would mean that manufacturing in this state could not compete successfully in the adjoining states and place an embargo against Ohio market for their product. Twenty-four states, and among them large dairy states and large states from the standpoint of per capita consumption of ice cream, have either an 8 per cent, standard or less or no standard. Consequently it is the belief that a standard fixing a minimum of 8 per cent. fat and 20 per cent, total milk solids would provide ice cream which is palatable, healthful, nutritious and practicable from a standpoint of the consumer, manufacturer and the producer. Lee cream manufacturers will inevitably provide a higher grade product where opportunity for sale of same exists since the standard fixed is only a minimum standard. While the standard for milk in the state of Ohio is 3 per cent. the vast majority of milk sold in the state today will test from 3.5 per cent. to 4 per cent. because of the demands of trade and competition.

Moreover, it must be borne in mind that experiments have been conducted and that there is now produced ice cream in which cocoanut oil or other substitutes have been used instead of milk fat. The cost of manufacturing such ice cream is very much less than the cost of manufacturing ice cream from dairy products. Coming at the present time therefore, an increase in price of ice cream caused by any increase in butter fat content above that of the normal production of the state which would be caused by legislation raising a standard above the normal would throw the gates wide open for the manufacture of such substitute products to the detriment of the health of the people. Ice cream should be distinctly a dairy product. But the minimum requirement should be such that while it eliminates ice cream which is not of a sufficiently high standard to guarantee to the people a healthful and nutritious product, yet standard ice cream could be brought at a price within the reach of all classes of people without requiring them to resort to the purchase of substitutes neither healthful nor nutritious. Nor should the standard be such that it would remove from the market a large amount of butter fat which would create a shortage of butter fat for butter or a high grade fluid milk. It is therefore the belief that the standard fixed in the Kryder Bill as it was passed by the Senate, viz.; not less than 8 per cent. of milk fat and not less than 20 per cent, total milk solids would provide an ice cream for the state which would be healthful, palatable, nutritious, reasonable in price, and an excellent minimum standard.

It is not to be thought that legitimate manufacturers are opposed to a standard for ice cream, nor that they desire ice cream to be sold in the state which does not test at least 8 per cent, of milk fat and 20 per cent. of total milk solids. The legitimate manufacturer is desirous of insuring to the consuming public a healthful and nutritious product, made from dairy products and of such quality as will insure the greatest sale and consumption of ice cream. A strong stand has been taken by them against the manufacture of ice cream in which the milk fat has been replaced by cocanut oil or other substitutes, and in approving the standard fixed by the Kryder Bill as it passed the Senate unanimously they believe that they are acting for the best interests of the consumer, the manufacturer and the pro-

It is therefore believed by the manufacturers that they are logical in asking and expecting the House to approve the original standard fixed by the Kryder Bill as it passed the Senate unanimously, viz.: with a standard of 8 per cent, fat and 20 per cent, total milk solids, and they disapprove of any different standard or the amendment proposed by the House Committee.

Very truly yours,

Ohio Association of Ice Cream Manufacturers, By S. M. Ross, President.

STATEMENT OF MEDICAL AUTHORITIES RELATIVE TO

Ice cream eight per cent, fat and twenty solids nutritious and healthful. Most children do well on fairly low fat content

HENRY D. CIMPIN, A.M., M.D. Prof. of Diseases of Children Post Graduate Hedical School and Hospital; Supervising Physician of the Children's Department New York Post Graduate Hospital, New York, N. Y.; Consulting Physician to the William Parker Hospital, to the Randall's Island Hospital, to Texacial School of the Children, Seachis and to the Hackensack Hospital; Ex-President to the American Pediatric Society.

Minimum standard of eight per cent, fat twenty per cent, total milk solids seem about right and preferable to ice cream with higher fat and lower per centage milk solids.

L. EMMET HOLT, M.D., Sc. D., L.L.D. Prof. of Diseases of Children in the College of Physicians and Surgeons, Columbia University, N. Y.; Attending Physician to the Babies and Foundling Hospitals, N. Y.; Consulting Physician to the New York Infant Asylum, Lying-in Hospital, Orthopedic, and hospitals for the ruptured and crippled.

I would unqualifiedly recommend ice cream of eight per cent, butter fat and twenty per cent, total milk solids as healthful and nutritious and as an excellent minimum standard I would not advise feeding children ice cream with higher per cent, butter fat and lower per cent, solids not fat.

DR. H. J. GERSTENBERGER, M.D. Prof. of Pediatrics at Western Reserve Medical School; Medical Director of the Babies Dispensary; Visiting Pediatrist to Lakeside Hospital, Cleveland.

Would endorse ice cream with minimum eight per cent. fat and twenty per cent. total solids as helpful and nutritious. Do not advise ice cream with higher per cent. of fat.

Dr. I. A. Abt., M.D. Prof. of Pediatrics North Western University Medical School; Attending Physician Michael Reese Hospital, Chicago.

The Academy of Medicine of Cleveland cannot endorse the Kryder ice cream bill because it feels that it will militate against the public health and the interests of the mothers and babies of Cleveland for the following reasons:

1. It calls for 12 per cent, butter fat in icc cream, whereas this amount is too rich for the digestive organs of children and invalids. Ice cream with 12 per cent, butter fat should not be put on public sale if it is to be eaten by children or invalids. Hospitals would have to put in their own ice cream making plants.

The Kryder ice cream bill if passed would create a market for butter fat which would give an incentive to dairymen to reduce the butter fat in whole milk to the legal minimum. In the city of Cleveland the legal minimum of butter fat in whole

milk is quite low-3 per cent.-whereas whole milk averages 3.5 per cent to 4 per cent.

3. The cow produces just so much butter fat. Nothing should be done to take this butter fat from the whole milk where it belongs, for the sake of putting an overdose in ice cream where it does not belong.

GUY W. WELLS, Executive Secretary.

RESOLUTION.

Whereas, there is legislation pending before the Ohio Legislature providing for the licensing of ice cream plants and defining and regulating the sale of ice cream.

And whereas, Substitute Senate Bill 105, now before the Ohio Senate would fix the minimum standard of not less than twelve per cent. by weight of milk fat.

Be It Resolved, that the Columbus Academy of Medicine recommend ice cream of eight per cent, butter fat and twenty per cent, total milk solids as healthful and nutritious and an excellent minimum standard,

Be It Further Resolved, that we would not advise feeding children ice cream with a higher per cent. butter fat and a lower per cent, solids not fat.

Passed unanimously.

GEO. C. SCHAEFER, President, Academy of Medicine, Columbus, O.

Resolved that it is the sense of this Society that in drafting legislation regulating the production and sale of ice cream for public consumption, that the following points should be provided for.

1. Efficient inspection to insure cleanliness in production and handling product.

 Licensing of all producers who sell to the public regardless of amount of ice creams produced and sold.

 Only pure milk products and recognized pure flavors be used.

 That 8 per cent, butter fat as a maximum low standard of fat content and a total milk solids of not less than 20 per cent, be established.

That a high butter fat content is detrimental to the health and welfare of children who consume a large portion of the ice cream manufactured.

Unanimously adopted.

A. F. Shepherd, President, Montgomery Medical Society, Dayton, O.

The only interest that the medical profession has in the proposed ice cream legislation is that the bill shall provide, first that inspection to insure cleaniness be the first consideration, second licensing of all producers irrespective of amounts alone will protect the children of the state against impure products, third to provide for a well balanced food the bill should insist on a butter fat content not exceeding eight per cent, and a total of solids of not less than 18 to 20 per cent, fourth that only milk products should be used in the manufacture of ice cream, fifth the high butter fat content as in the bill is a detriment to children. Les cream of high butter fat content

is now procurable to adults if they desire, sixth age and sanitation of the greatest importance.

Resolutions by the entire Commission.

WILLIAM J. FRAF, President.

Medical Milk Commission Cincinnati Academy of

Medical Milk Commission Cincinnati Academy of Medicine.

To the Members of the Ohio Legislature:

I would suggest that an amendment be made to the Senate Substitute Bill 105, defining and regulating the manufacture of ice cream so that the minimum standard be lower and that there be a standard for total milk solids.

Our experiments in making ice cream from different percentages of butter fat and total milk solids cause us to recommend and indorse a regulation defining a minimum standard for ice cream of 8 per cent, butter fat and 20 per cent, total milk solids.

In my judgment the bill as introduced, if enforced, would be a menace to the ice cream and dairy industry generally.

R. B. STOLTZ, in Charge of Dairy Manufacturing, the Ohio State University.

To the Members of the Ohio Legislature,

It is with regret that I learn of the contemplated passage of Substitute Senate Bill 105, Mr. Kryder, placing a minimum butter fat of 12 per cent. in ice cream. This will unquestionably be detrimental to the welfare of many children as many children cannot handle that amount of butter fat in food.

I bespeak your consideration for the welfare of the children and ask for a much lower minimum. Personally I believe 8 per cent. to be high enough, and this is a fair average as ice cream is now made.

E. G. Horron, Assistant Professor of Medicine, in Charge of Pediatrics, Ohio State University; Visiting Pediatrics Children's Hospital; Visiting Pediatrist, Protestant Hospital.

To the Columbus Housewives Association:

In my opinion ice cream containing 8 per cent. butter fat and 20 per cent. total milk solids is preferable to ice cream carrying 12 per cent. butter fat, for the reason that the higher fat cream is likely to produce stomach and intestinal disorders especially in children and in persons with weak digestive function. I believe that the public health interests will be served better by the 8 per cent. butter fat and 20 per cent. total milk solids than by the 12 per cent. butter fat standard.

J. F. LYMAN, Professor of Agricultural Chemistry in Charge of Nutrition.

To the Housewives' League:

We recommend ice cream of not more than 8 per cent, butter fat as being more desirable for children than ice cream containing a higher percentage of fat.

FAITH R. LANMAN, Head of Department of Home tical application of hot air sterilization.

The above was followed with the names of thirtyfour Ohio physicians endorsing eight per cent. as a preferable standard.

WASTING DOLLARS IN COAL

Read this letter, then take a walk through your boiler room and make mental answers to these questions: Did you find coal scattered in out-of-the-way places? Had wheels and feet ground some of the coal to powder? Were there any pieces of coal in front of the boilers? Water thrown over the ash pile shows up unburned coal or coke. Was there any unburned fuel in your pile? Was there any steam or water leaking from valves, cocks or joints? Were the'te any cracks in the boiler furnace and setting? Were the uptakes, breechings, and steam pipes insulated? Was the exhaust steam being utilized?

Why do you purchase coal? To make steam. How is steam made? The hot gases liberated by the lurning coal come in contact with the holter shell and the heat passes through, vaporizing the water. The hotter the gases are when they strike the shell of the boiler, the less coal it takes to produce a given quantity of steam. The draught up the chimney is constantly pulling air and gas out of the furnace and the cold air will enter, wherever it can, to fill up the vacuum. This air cools off the hot gases, reducing their effectiveness. The loss of heat from this source alone may reach large proportions.

You can test your furnace and setting for air leaks by holding a candle or lighted match around cracks or crevices in the brick work, around the arches, clean-out doors, etc. If the flame is drawn in you are wasting pounds of coal every day. These leaks can be patched with asbestos rope saturated with fine clay mortar.

Deposits of soot in the flue and scale in the boiler resist the passage of heat from the gases into the water. Even a slight coat of scale will greatly reduce the quantity of heat passing through.

The quantity and kind of chemicals in the feed water will determine the frequency with which scale should be removed. The soot should be scraped from the flues at least once a day.

There are three methods of hand firing—the spreading, alternate, and coking methods—each of which has advantages under certain conditions. The evenness of the fuel bed and the quantity of air admitted over the fuel bed are all-important factors in the economical burning of fuel. Firing a boiler to secure the greatest quantity of heat from the coal means much more than building a fire, shovelling coal, and watching the steam gauge. It requires skill which can only be obtained by close study, observation, and attention to details.

The plant manager who wants to get the most steam out of his coal should send the name and address of his engineer or fireman to the Dairy Division, United States Department of Agriculture, Washington, D. C., for Department Bulletin 747. entitled "The Economical Use of Fuel in Milk Plants and Creamerics," which discusses in detail the points mentioned.—Milk Plant Letter No. 87, U. S Department of Agriculture.

HOT AIR STERILIZATION OF DAIRY UTENSILS

Experimental Data Presented Merely Points Out Some Of the Fundamental Facts Upon Which Rest the Commercialization Of the Process

By S. Henry Ayers and Courtland S. Mudge

From the Research Laboratories of the Dairy Division, U. S. Dept. of Agriculture

From an article in the Journal of Dairy Science

It must first be pointed out that when sterilization of utensils is under discussion, the term "Sterilization" is not used in a strict hacteriological sense. Normally, of course, sterilization means the complete destruction of bacteria, but as commonly applied in the dairy industry it means the results obtained by the use of steam at about 212 deg. F. Steam at this temperature should destroy nonspore-forming bacteria, if applied for a sufficient length of time, but snores of bacteria are not destroyed.

This point should be kept in mind in connection with the use of hot air for the sterilization of utensils. Therefore, in order to devise a process for the sterilization of utensils by hot air comparation with usual steam sterilization it is necessary only to employ a temperature sufficiently high to kill nonspore-forming leateria.

Hot air has been extensively applied for a long time for the sterilization of glassware in the laboratory. For this purpose a temperature of about 350 deg, F. has leen employed for a period of one and one-half hours. In this process the object is to completely destroy all living organisms, both spore formers and nonspore formers. In other words, this process effects a complete sterilization in the strict sense of the term.

It seems probable that the possibilities of hot air sterilization of dairy utensils have been overlooked because of the very high temperature and long heating period necessary for complete sterilization. Furthermore, the knowledge that moist heat is much more efficient as a destructive agent has led to the use of flowing steam for the sterilization of dairy utensils.

Throughout this paper the term sterilization is not nsed in a strictly bacteriological sense but is used as in the dairy industry as previously explained. If it were necessary to use a temperature of 350 deg. F. for one and one-half hours, the use of hot air would at once become innractical.

The air, however, need only be at a temperature sufficiently high to destroy non spore-forming bacteria when utensils are exposed to it for a given period of time. Naturally the lower the effective temperature and the shorter the length of exposure the more practical will be the process.

Since it is only necessary to accomplish by hot air the same results obtained by steam at about 212 deg. F, a field of possibilities is opened up.

Before hot air sterilization can be properly applied it is necessary to know the effect of hot dry air on bacteria, since the primary object of utensil sterilization is one involving bacteriology.

The following points are considered in this paper:

- 1. Temperature of hot air and heating period neces-
- sary to destroy bacteria.

 2. Hot air sterilization of caus, where cans can be held, as at dairy farms.
- 3. Hot air sterilization of cans, where process must be continuous, as in plants.
- It is realized that the results presented do not solve all the problems of hot air sterilization. The practical application is an engineering problem which, however, must be based on data of the nature of the kind given in this paper.

As early as 1881 Koch and Wolfflugel (1) showed that spure-free lacteria were destroyed at a temperature of a little over 212 deg. F. when heated for one and one-laif hours. Spore formers, on the other hand, were not destroyed by three hours' heating at 284 deg. F. Since that time other investigations have shown that to destroy micropragaisms a higher temperature is required with dry heat than with moist heat.

Before experimenting with the sterilization of utensils with dry heat it was considered advisable to determine its effects on different bacteria, and studies were made of three organisms, B. coli, a heat resistant lactic type of bacteria which was not a sporformer, and a typical spore forming organism.

The cultures were grown on agar, then suspensions of the growth were made in sterile distilled water. Previously, a number of large bore test tubes had been prepared by inserting in them a strip of tin through a cotton plug, and the whole sterilized in the dry oven. The sterile strips of tin were then immersed in the suspension of bacteria, replaced in the tubes, and allowed to dry at about 90 deg. F. Care was taken that these strips did not touch the walls of the test tube.

These tubes were heated in an oil bath and the temperature of the air surrounding the strips of tin was determined by a thermometer placed in a control tube immersed in the bath.

In the first experiments, a heating period of thirty minutes was chosen because this is about the average steaming period for dairy utensils on dairy farms which are equipped with a sterilizer.

After heating, the tubes containing the infected strips of tin were allowed to stand until the air had cooled to room temperature, then they were removed and placed in tubes of sterile litmus milk. Complete destruction of the bacteria was determined by the absence of growth in the milk tubes.

The results in Table 1 are of interest because they show that spore-free bacteria were destroyed at temperatures which were relatively low, particularly in comparison with dry heat laboratory sterilization.

As will be noted, about ten minutes was required to raise the air temperature to the desired point and it was maintained at the temperature for thirty

B. coli was destroyed after thirty minutes heating at 160 deg. F. in one test. In a second test it survived 160 deg. F. but was destroyed at 180 deg. F. The thermal death point of this organism when heated in milk for thirty minutes is about 140 deg. F. It is evident, therefore, that it is somewhat more resistant to dry heat. The thermal death point of B. coli is slightly higher when heated in milk than nonspore-forming pathogenic bacteria, so it seems reasonable to assume, that their resistance to dry heat would be no greater than B. coli.

The heat resistant lactic type of oganism, while not a spore former, withstood a higher temperature when heated in milk than B. coli, its thermal death point being 168 deg. F. when heated for thirty minutes. It was realized that organisms of this type which are commonly found in milk would also be

TABLE 1
The Effect of Exposing Bacteria to Dry Heat at Different
Temperatures for Thirty Minutes

Tempera-	Time required to heat	Culture Killed		
ture beated at	air to this temperature	B. coli	Heat resistant lactic type	Spore
°F. 140	Minutes 8	No	No No	
t60	8	1st test—yes 2d test—no	No	
180 212 221	10	Yes Yes	No No No	
230	10		1st test—yes 2d test—ye 3d test—ye	5
250 270	7		Yes	No No

on dairy utensils and because of their high resistance to moist heat a higher temperature dry heat would be necessary for their destruction than was required for B. coli.

This proved to be the case, as shown in Table 1. This lactic type survived heating at 221 deg. F., but was destroyed in each of three tests when heated to 230 deg. F. for thirty minutes. Other experiments showed that this organism was destroyed when held at 230 deg. F. for ten minutes when the time required to reach this temperature was nine minutes.

The spore-forming organism was not destroyed even when heated for thirty minutes at 220 deg. F. This temperature is probably about as high as could be practically employed. The fact that spore formers survive such high temperatures should be no hindrance to the development of hot air sterilization because these resistant spores would not be destroyed by the usual process of steam sterilization now employed in the dairy industry.

It seems, from these results, that to make hot air sterilization successful for dairy utensils a temperature of only 230 deg. F. need be employed when it is maintained for thirty minutes. This heating period could be employed at dairy farms or at any plant where the sterilization of utensils does not have to be a continuous process. It is, of course,

out of the question where utensils must be sterilized in large numbers in a short space of time.

This brings up the question of quick heating with hot air. From a few experiments, the results of which are shown in Table 2, it is evident that when the heating period was reduced a higher temperature was required to cause a destruction of the organisms.

The experiments were conducted in the same manner as previously described except that the heating period was varied. Tubes containing the infected strips of tin were heated gradually and a tube was taken out every minute and examined for the effect of the temperature reached on the culture. B. coli when heated in two minutes to 167 deg. F. was destroyed. Evidently a short heating period and a low temperature is effective. The heat resistant lactic type, however, was not destroyed when heated to about 255 deg. F. in a period of six minutes. It was destroyed when heated in seven minutes to about 273 deg. F.

In this connection it is of interest to observe that this organism was destroyed by heating for ten minutes at 290 deg. P., but in this case the culture had been subjected to a nine-minute heating period while the air temperature in the tube was being raised from room temperature to 230 deg. F. This emphasizes the fact that there is a time and temperature factor to be considered.

It should be remembered that the method of determining the effect of heat in these experiments measured the absolute thermal death point of the organism, that is, the temperature at which every cell was destroyed. It is very probable that long before the temperature cited were reached the majority of the bacteria were killed. In fact only a few cells may have resisted the highest temperature. This point is important in connection with the practical amplication of hot air sterilization.

TABLE 2

Effect of Heating Bacteria Rapidly in Dry Air

Heating period	Heated to	Culture killed	Culture
Minutes	*F.		
t	129.2	No)
2	167.0	Yes	
3	194.0	Yes	≻ B. coli
4	212.0	Yes	
2 3 4 5	224.6	Yes) .
1	149 0)
2	195 8		
3	224.6	(Heated to 255.2°F	
4	240.8	in 6 minutes.)	1
5	248 0		i
1 2 3 4 5	255 2	No	
	4.00		Heat resistant
Į.	147.2		lactic type
- 4	197.6		
.3	228 2	(Heated to 273.2°F.	
4	249.8	in 7 minutes.)	
5	264.2		1
1 2 3 4 5 6 7	269.6		1
7	273.2	1.02	,

From the data obtained in the experiments previously reported it seemed evident that on theoretical grounds, at least, good results could be obtained in intensil sterilization by an exposure to hot air at 230 deg. F. for a period of thirty minutes. A process of this nature should be practical for use on dairy

farms or any place where there is plenty of time for sterilization.

Experiments were, therefore, conducted with the sterilization of cans under laboratory conditions. An apparatus was constructed which consisted of a gas oven with a fan inside so arranged that it would blow air into an inverted can. Heat was supplied by a gas burner beneath the oven so that any desired temperature could be maintained. Determinations were made of the time required to heat the air in the can to the desired temperature with the fan running at a delinite speed and the air entering the can at a known temperature. From these figures it was possible to place cans in the apparatus and heat them to any temperature desired and hold them for any length of time.

The cans used in the experiments were filled with milk which was allowed to sour in them. Sometimes cream was used in place of milk. The three 4-quart cans which were employed in each experiment were handled in the same manner except than two were sterilized for different lengths of time and the third was kept for a control. It was washed the same as the other two but not sterilized. The cans were washed in water at about 112 deg. F. so as not to give a very efficient washing and to avoid destroying any bacteria through heat. No washing powder was used and the cans were not rinsed at all carefully. In fact the drippings from the cans when they went into the hot air sterilizer were milky. This type of washing was purposely employed in order that the cans would be in a condition worse than would normally be encountered. It was felt that if efficient sterilization could be obtained by hot air treatment with the cans in the condition as used in these experiments, then successful results could surely be expected under commercial conditions where the cans would be more thoroughly washed.

After sterilization, the cans were examined for bacteria by rinsing with 100 cc. of sterile water and plating. The bacteria in the control unheated can were determined in the same manuer.

From the figures shown in Table 3, it is evident that efficient sterilization was obtained when cans were heated for thirty minutes at 220 deg. F. Six minutes was required to raise the temperature of the air in the can to this point. Heating for only fifteen minutes caused a very great reduction in bacteria but the results were not so uniformly good. It should be noted that the figures represent the number of bacteria per 4-quart can and not the number on the plates.

In one experiment cream was allowed to sour in the cans for four days. In this case, as will be noted, special methods were used to detect yeasts and molds. The yeasts were destroyed at both holding periods and for practical purposes the same might be said of the molds. The numbers of the organisms being 200 and 100 per can represent two and one colonies on each plate. These might easily have been contaminations which are commonly observed in these laboratories. In all the experiments

the cans were completely dry after the heating process. They dried very rapidly when the air temperature reached 212 deg. F.

It is believed from these results that hot air at

The Destruction of Microorganisms in Milk Cans by Exposure to Dry Air at 230°F.

			Number bacteria per can			
Series can before No. washing				Heated 15 minutes	Heated 30 minutes	
1	Sour milk	3,40	0.000,000	100	100	
2	Sour milk	51	0.000,000	300	100	
3	Sour milk	3.60	0.000,000	300	400	
4	Sonr milk	761	((00),000)	1.800	600	
3 4 5	Sour milk	1.089	0.000,000	500	800	
6	Sour cream	2.3	000,000	400	400	
- 7	Sour milk		0.000,000	800	200	
8 9	Sour milk	1.574	0.000,000	1,500	200	
9	Sour milk	1,500	000,000	4,000	200	
10	Sour milk	3,110	0.000,000	4,200	400	
11	Sour cream, 4 days old		,000,000	21,700	400	
11			7,000,000	Yeasts: 0 Molds: 200	Yeasts: 0 Molds: 100	

230 deg. F. for a period of thirty minutes can be used satisfactorily for the sterilization of dairy utensils. Moak (2) reports the use, with excellent results, of dry heat for sterilization on a certified milk farm. From his paper it seems that a temperature of about 270 deg. F. was employed for two hours. The results of our experiments indicate that it is not necessary to use such high temperatures and that thirty minutes' heating is sufficient. This would naturally reduce the cost of the sterilizing process.

The application of hot air sterilization in plants where a large number of cans have to be handled in a short time presents an entirely different problem from that of the dairy farm. In this case it is a question not only as to whether it is possible to obtain a satisfactory sterilization in a few minutes but also whether it can be done on a practical sact Only the first problem will be considered in this paper, namely, is it possible to sterilize cans by hot air in a few minutes time?

From results reported earlier in this paper it was evident that if the holding period was reduced the temperature must be raised. Acting upon this information the temperature first used was 248 deg. F. Cans were treated in the same manner as when hold for thirty minutes at 230 deg. F., but in this series of experiments the air in one can was raised to a temperature of 248 deg. F. in four minutes and the other can, heated to this temperature in the same length of time was held at it for two minutes. The unheated control can was treated as usual.

The results in Table 4 show that a great destruction of bacteria took place when the air in the cans was raised from about 112 deg. F., the temperature after washing, to 248 deg. F. in four minutes but the results were not uniformly low. When held two minutes, making a total heating period of six mintucts, much better results were obtained. In one experiment it was found that the yeasts were destroyed and the molds practically so.

The results obtained with the four-minute heating and two-minute holding periods were not as good as those obtained when a temperature of 230 deg. F. was employed and maintained for thirty minutes. It must be remembered, however, that the cans were in an extremely bad condition and this heating process might prove satisfactory if the cans were properly washed.

Another series of experiments was conducted, using an air temperature of 266 deg. F. In this case the time required to heat the air in the cans to this temperature was five minutes. One can was merely raised to 266 deg. F. and the other held two minutes

TABLE 4
The Destruction of Microorganisms in Milk Cans by Exposure to Dry Air at 248*F.

	Contents of can before washing	Number bacteria per can			
Series No.		Washed	248°F. in 4 moutes	Heated to 248° F. in- minutes and held for 2 minutes	
1	Sour milk	51.000.000	300	300	
2 3 4 5 6 7 8 9	Sour milk	17.300.000	6.200	3.700	
3	Sour milk	33,000,000	2,000	,1110	
4	Sour milk	1,050,000,000	7.00	100	
5	Sour milk	1,540,000,000	241,000	90,000	
6	Sour milk	600,000,000	1,100	500	
7	Sour milk	1,310,000,000	3,200	100	
8	Sour milk	1,280,000,000	15,600	400	
9	Sour milk	2,500,000,000	54,900	900	
10	Sour milk	98,000,000	600	0	
11	Sour cream.				
	4 days old	370,000,000	1,600	1,000	
11		Yeasis: 1,290,000 Molds: 550,000	Yeasts: 0 Molds: 100	Yeasts: 0 Molds: 100	

at this point. Here again, as may be seen from Table 5, the effect of the two-minute holding period could be observed and the results were very satisfactory.

One more series of experiments was tried in hopes

TABLE 5
The Destruction of Baeteria in Mdk Caus by Exposure 10
Dry Heat at 266°F.

		Number bacteria per can			
Seri No.	Contents of es can before washing	Washed	Heated to 266° F. in 5 minutes	Heated to 200° E. in 5 minutes and held for 2 minutes	
1	Sour milk	5,700,000,000	1,000	600	
2	Sour milk	2,300,000,000	3,600	100	
. 3	Sour milk	2,400,000,000	700	300	
4	Sour milk	1.280.000,000	7,800	100	
- 6	Sour milk	2 100 000 000	13.300	900	

of being able to reduce the heating period to four the same by increasing the temperature. In these experiments a temperature of 284 deg. F. was employed and the air in one can was raised to this point in four minutes. Another can was heated in the same time held two minutes at this temperature.

The results in Table 6 show that in both cases good reductions were obtained, although here again the value of the two-minute holding period at 284 deg. F. was manifest. The greater efficiency of 284 deg. F. over 288 deg. F. is shown by comparison of the hacterial reductions in Tables 4 and 6. This is particularly true when the air in the cans was merely heated to the temperatures indicated. In all the experiments the cans can out perfectly dry.

An interesting point is indicated by the results

of these experiments, namely, that to obtain effective sterilization a certain minimum length of exposure seems to be necessary. While the holding period can be reduced as the temperature is increased there seems to be a point beyond which the increase in tem-

TABLE 6
The Destruction of Microorganisms in Milk Cans by

,		Number bacteria per can			
Contents of Series can before No. washing		Washed	Heated to 284°F. in 4 minutes	Heated to 284°F, in 4 minutes, then held 2 minutes	
1	Sour milk	450,000,000	2.000	100	
3	Sour milk	7.10,000,000	200	300	
3	Sour milk	900,000,000	200	200	
5 6 7 8	Sour milk	410,000,000	700	200	
- 5	Sour nolk	660,1600,000	1.000	600	
6	Sour milk	1.010.000.000	1,900	2(0)	
7	Sour milk	2.100.000.000	500	100	
8	Sour milk	1.260.000.000	2,400	700	
9	Sour milk	1.390.000.000	4110	400	
10	Sour milk	330,000,000	400	200	
11	Sour cream,				
	5 days old	960,000,000	400	300	
11		Yeasts: 1,900,000	Yeasts: 0	Yeasts:0	

perature does not permit of a proportionate decrease in the holding period,

SUMMARY

- 1. The destructive effect of hot air on various types of bacteria is shown.
- A temperature necessary for effective sterilization of utensils has been determined which seems to make the process of hot air sterilization practical for dairy farms or plants where utensils can be held.
- 3. The temperature of hot air necessary to cause sterilization in from four to six minutes has been determined.
- 4. No definite facts have been presented to show the value of hot air sterilization from a practical standpoint. The results merely point out some of the fundamental facts upon which rest the commercialization of the process. This is an engineering and economic problem.

WASHING TRUCKS IN A GARAGE

In washing trucks in a garage, even where trucks are washed in a washing bay, or where they stand, with the use of pipe lines running from nearby pipe connections, one company finds the use of standing water will often be found a great convenience, especially when washing the less accessible under parts of the trucks. For this purpose a pail is generally used, the pail being carried from truck to truck by hand, during the washing of the different vehicles. However, it will be found a great convenience if this pail, instead of being carried from truck to truck is mounted on a stand.

The stand can easily be constructed from two sections of board about 3 in. by 4 in., mortised so as to form a flat surface and fitted with four casters. Mounting the pail on this stand makes it easy for the washer to push it from place to place, forms a convenient stand for it when stationary and prevents splashing water about in transit and making a sloppy garake floor. The last is always an item of importance in tire depreciation.

COMPOSITION OF THE ICE CREAM MIX

Standardization Of the Finished Product Most Essential Factor In the Successful Manufacture of Ice Cream

> By Thomas H. Wright, Jr. Assoc. Professor of Datry Husbandry, South Dakota State College From an address delivered at the annual convention of the Ice Cream Mirs' Assn. of South Daketa

The composition of the ice cream mix is one of the most important essentials in the successful manufacture of ice cream. It not only affects the uniformity of the finished product but also the cost, quality ad overrun.

In order to have uniform ice cream we must have the composition of our mix uniform from day to day. I believe that one of the reasons why the smaller plants sometimes lose out in competition with the larger is the lack of uniformity in their product. Of course there are other factors which enter into the uniformity of the finished product, such as aging, freezing and overrun, but the composition of the mix is also of importance.

No grocer would think of selling 11 eggs for a dozen one day and 13 the next, yet the man who prepares his mix carelessly is doing the same thing. The fat is the most expensive ingredient in the mix and the one which varies perhaps as much as any other. With fat at 40c a pound, if we put in one per cent. more fat than is called for we are increasing by 2 cents the cost of each gallon of ice cream. This would amount to \$1,000 a year on a make of 50,000 gallons. With milk solids not fat or serum solids at 16 cents, an increase of these by one per cent. in the mix amounts to an added cost per gallon of eight-tenths of a cent or \$400 on a make of 50,000 gallons. These figures should surely interest us in seeing to it that the composition of our mix stays at the standard we have set.

When it comes to the quality of the ice cream, our state standard of 14 per cent, butter fat fixes the minimum for us in respect to the fat content. We will all agree that this will give us a good quality ice cream as far as this ingredient is concerned, but how about our solids not fat and especially our milk solids not fat or serum solids?

Let us look at a formula in which there has been no attempt made to add additional serum solids and, while I think of it, let me suggest that you figure your formulas on a 100 pound basis instead of on the basis of one which is supposed to make a definite amount of finished ice cream. When figured on a 100 pound basis it is much easier to arrive at the percentage of your various ingredients. Also the 100 pound mix will make approximately 20 gallons of ice cream.

FORMULA NO. 1

Lbs. Lbs Lbs. Serum Total Fat Solids Solids 80.0 lbs, cream, 17.5% fat, 7.67% s.n. f. ral Solids Solids 15.0 lbs, sucar 12.5% s.n. f. ral Solids Solids 4.0 lbs, sucar 15.00 s.n. ral 15.00 5.5 lbs felatine 50 5.5 lbs, flavor 50

This mix contains 35.64 per cent., total solids

which is usually considered sufficiently high, but the high solids content is due to the high percentage of fat (most states have a lower standard) and to the large amount of sugar. Our serum solids are, however, too low, I believe. In some experimental work earried on in Oklahoma by Professor Baer, he found that although ice cream made from a mix containing 14 per cent. butter fat and no extra serum solids seemed quite satisfactory, yet he believed that they had a much more uniform and better ice cream where the mix contained additional serum solids.

I think it is usually agreed that in order to get a good body and one that will stand up well, we should use more serum solids than are found in the cream itself. I would think that we should increase these solids to at least 7.5 per cent.

The sugar content in the above mix is 15 per cent., which is the maximum we can use, as anything over this will make the ice cream too sweet. Some claim that even this is too sweet and that a 13 per cent. sugar content is better. We do not want to get our ice cream too sweet but we should remember that sugar is the cheapest solid we can put in ice cream.

Let us now see if we can not figure a mix which will give us 7.5 per cent, serum solids. We will use for the purpose of increasing these solids, evaporated milk containing 8 per cent. fat and 20 per cent. serum solids. We already have 6.14 pounds serum solids in our cream but inasmuch as part of this cream will be replaced by evaporated milk we will lose some of these solids, so instead of figuring on adding 7.50-6.14 or 1.36 pounds of serum solids let us figure on adding 2 pounds. This will require

- × 100 or 10 pounds of evaporated milk (the evapo-

rated milk contains 20 per cent. serum solids.) This will mean that we will have to cut down the number of pounds of cream to 70 and increase its rich-

Let us put this down as a formula and see what we have:

FORMULA No. 2

I be 70.0 lbs. cream, 19% fat, 7.53% s. n. f. 10.0 lbs. evap. milk, 8% fat, 20% s. n. f. 15.0 lbs. sugar 13.30 5.27 out lies, sugar 4.0 lies, water .5 lies, pelati-.50 flavor .5 Ibs.

First, how do we figure the per cent, of butterfat in the cream? We needed 14.0 pounds of fat in all and the evaporated milk furnished 0.8 pound. This left 13.2 pounds required in the cream and --- \times 100 gave us approximately 19 as the desired rich-

ness of cream. Then
$$70 \times \frac{17}{100}$$
 gave us 13.3 as

the actual pounds of fat in the 70 pounds of 19 per cent. cream.

Now how did we figure the percentage of solids not fat (s.n.f.) or serum solids in the cream? Normal skim milk has 9.3 per cent. s.n.f.. In 100 pounds of 19 per cent, cream we have 81 pounds of skim milk.

Then 81
$$\times \frac{9.3}{100}$$
 gives us 7.53 as the per cent. of

s.n.f. in cream containing 19 per cent. butterfat. Taking 7.53 per cent. of 70 gives us 5.27, the pounds of s.n.f. in 70 pounds of this cream.

Adding up the serum solids in this formula we find that we are still .23 per cent. below the 7.5 per cent, standard which we had decided upon. This means that we must increase our evaporated milk content still more. Let us try 2 pounds more and see what we get.

In the above formula we would require only a 19.2 per cent, cream, but this is closer than most small plants can standardize to and the way we have it now there is a margin of safety on our butter fat content.

There is another method of figuring formulas by means of algebra where we solve for three unknowns, but I will not try to explain it at this

So much for the method of figuring formulas. Now, how does the composition affect the overrun. would not attempt to state how much overrun you should try for with a certain solids content, as each manufacturer must decide that for himself. We do know, however, that with a higher solids content, we can safely stand a higher overrun.

Some say that with 32 per cent, total solids we can safely work for an 85 per cent, overrun and with 35 per cent. total solids, 100 per cent. overrun. Another, an ice cream manufacturer on the Pacific coast, says we can set our overrun roughly at 3 times the total solids content. He uses 45 per cent. total solids and sets as his standard 135 per cent. overrun. He claim that such an ice cream maintains a better texture during holding in the retailer's cabinet. Some claim that such a high solids content would invite sandiness, but he has never been troubled with this defect. He uses the maximum of cane sugar and says that this helps to prevent sandiness. I really believe that the amount of overrun our ice cream will stand depends upon the ratio of fat to the serum solids and to the total solids rather than upon the total solids content alone, the serum solids being especially valuable.

It might be well, at this time, to mention some of the factors, in addition to the composition of the mix which will affect the overrun. The following will tend to reduce the overrun; lack of proper aging, scrapers in poor condition, dasher losing speed during the actual freezing, too low speed of dasher all of the time and filling the freezer so full with mix that there is not room for the ice cream to expand sufficiently.

In freezing ice cream we must have our dasher running fast enough and of such a design that it will break up the mix so the cold can get at it. We must also take into consideration the time of freezing as influenced by the temperature and flow of brine. If our dasher ran at 200 r.p.m. and we were getting satisfactory results with a certain definite time for actual freezing, we could not expect to get the same results if we cut our time of freezing in half by using a brine of lower temperature. The ice cream would have been agitated only half as much and we would probably get a lower overrun.

Some recommend that you freeze your ice cream a little harder than you would ordinarily draw it and then shut off your brine and whip it up to the desired overrun. This is perhaps a good method. Some recommend a 12 deg. F. brine and others a zero brine, but this will depend on the rate of flow of your brine. One instance is cited where a -12 deg. F. brine was required but when the speed of the brine pump was increased it was found that the temperature of the brine could be raised and the proper overrun obtained.

When it comes to calculating the overrun, I believe that the weight method is the best. In order to arrive at the weight of a gallon of mix I would recommend calculating it rather than weighing, as there is apt to be some air incorporated even in the unfrozen mix, making the weight reading too low. According to the following formula the weight of a gallon of mix is equal to

(% fat × 1.07527) plus (% s. n. f. × .625) plus (% water) To find the weight of a gallon of ice cream of

any desired overrun, use the following formula: Weight of gallon of ice cream → Weight of gal, of mix

If one gallon of mix weighed 9 pounds and we wanted to make ice cream with 90 per cent, overrun, the weight of a gallon of such ice cream should 9

be ---- or 4.63 pounds.

100 + 90

To find the overrun which we have actually obtained when we know the weight of a gallon of the mix and a gallon of the finished ice cream, use the following formula:

Per cent. of overrun = (Wt. gal. mix) - (Wt. gal. i. c.) Wt. gal, ice cream

With a good scale and the use of the above formulas, an ice cream maker should be able to control his overrun quite closely.

Summing up, the composition of the ice cream mix is of importance because of its effect upon uniformity, cost, quality and overrun. The overrun depends upon the solids content, especially the serum solids. It also depends upon other factors, most of which can be controlled. The overrun itself can be controlled readily by means of a good scale, when we know how to figure the weight per gallon desired for the finished product.

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ICE CREAM SALES AND ADVERTISING

Wider Distribution of Quality Ice Cream Through Advertising Is Essential To the Complete Development Of the Industry

Advertising Manager, The Hvdrox Co., Chicago, III.

From an address delivered at the annual convention of the Illinois Association of Ice Cream Manufacturers

I believe that normally the producer, in contemplating an advertising campaign, must be confident that the product that he is going to advertise is equal to or better than anything else in the community. He must have faith enough to be willing to spend a large amount of money for months, perhaps years, because advertising money ordinarily does not come back the same year it is spent.

In facing a campaign the average producer realizes that the consumer is in a rather indifferent frame of mind, sometimes, and he has to use his very best effort to interest him in the product that is being advertised. However, it is this feeling that the consumer is hard to line up that it takes a long continued campaign that has deterred a large number of individuals who would otherwise be large advertisers from using advertising as one of their business forces. I feel that for this reason, and the fact that they have seen sometimes the right kind of a concern that has spent a good deal of money for advertising fail to get the desired gains, and that. on the other hand, they have found that companies perhaps manufacturing an inferior product, have yet succeeded to a remarkable degree without advertising, that they have come to the conclusion that advertising is not essential to the life of any business, and, while agreeing with them, I believe every man here will agree that it is essential to the complete development of any business, and that the concern that fails to do advertising on a considerable scale simply leaves untouched in the field immediately surrounding it a large amount of desirable business that sooner or later is going to be gobbled up by a more enterprising competitor.

I would like to state a hypothetical case of a company that has succeeded in developing a business of a hundred thousand dollars in a year without advertising. We will say there comes about in the management some change, perhaps through the introduction of some new members, and they decide to spend five per cent of the volume of their business for five years and see the effect. They spend five thousand dollars the following year, and find that it gains for them ten thousand dollars' worth of business, which the most gloomy member of the board of directors is willing to admit came

from advertising. But later on they get serious about it and decided that ten thousand dollars' worth of business isn't enough for that expenditure, that the advertising manager was all wrong, that his ideas were illy-conceived and badly executed, and it is a blue moment for the advertising manager. But about this time enters the argument the man who probably was responsible for the advertising campaign in the beginning, and he points out that, in addition to the ten thousand dollars' worth of new business, the company now has a thousand customers who spend an average of ten dollars apiece during the year, and that those customers really are what the company bought, and that those customers are going to do business with the company for the coming year and perhaps for many years to come. They decide to go ahead with the campaign and he does find that they get ten thousand dollars' worth of business from those customers the second year, and they influence five thousand dollars' worth of additional business, making \$25,000 worth of business and 2,500 customers to commence the third year. They spend \$25,000 the third year and influence ten thousand dollars' worth of business, and in the meantime their former customers have influenced ten thousand dollars' worth more business, making \$45,000, and in the meantime there have been added 2,000 customers, making These 4,500 customers spend \$45,000 and influence \$20,000 worth of business among their friends, or making \$75,000. It seems evident from now on the company is able to negotiate its advertising campaign out of excess profits that it never would have had if it hadn't started the advertising campaign. From that I would like to treat for a moment on the subject of winter advertising in the ice cream business.

Normally the average ice cream manufacturer enters the winter season in a rather gloomy fram of mind, realizing there is a period of six months perhaps when the best he can do is to hope to hold expenses down. I believe in attacking the proposition from that side only, you are handling only mone-half of the problem. There is the problem of increasing business to offset to some extent the decrease that comes with the colder season. Nearly

everybody in the United States has eaten enough ice cream in the winter time to know that it contains no chills. It simply appeares the appetite and quenches the thirst, and a large number of men have gotten into the habit I think, and women too, of dropping into the corner drug store and having an ice cream soda or a sundae in the afternoon, and finding that it does possess some "kick," and that it makes the rest of the afternoon more worth while. The women in the homes are finding that they can go out at four or five o'clock in the afternoon and buy a brick of ice cream and have it wrapped and take it home and serve it for dessert. Ice cream is really a good solution for the dessert problem, and what to have is quite a problem on the part of the average housewife.

It seems to me that if these phases of the convenience of ice cream as a dessert, and the value of ice cream as a refreshment are emphasized in the advertising that a large amount of additional business can be created, even at this season of the int. I believe that before ice cream consumption in the winter time becomes what it should be, that it must be made a habit, just like gum chewing or tobacco smoking or whiskey drinking is made a habit, and which was greatly augmented by the expenditures of a large number of companies who recognized the power of advertising. It seems in the State of Illinois two or three things are needed before we can expect ice cream eating to become a real habit in the winter time.

One of those is that better ice cream must be universally made. I am told that in Philadelphia, where it is impossible to buy a poor dish of ice cream, that the per capita consumption of ice cream is the highest of any place in the United States. I believe that if a better ice cream were made, so it were possible for the average individual to step out of his home and into the corner drug store and be sure that he could get a splendid dish or quart of ice cream that a very much larger consumption would be enjoyed here in Illinois than is at the present time the case. So if a better ice cream is made and wider distribution given it merely because it is universally made, and more advertising is done of that better ice cream, better distributed -the winter problem of the members of this association will be greatly reduced.

MEXICAN VANILLA PRODUCTION

At present Mexico employs over 50,000 people in the cultivation and extraction of vanilla—one of the most important of the minor extractive industries of that country, says Trade Commissioner Charles H. Cunningham. Vanilla is indigenous to the soil of Mexico. It is principaly cultivated in the districts of Papantla and Misantla in the State of Vera Cruz, the most productive region lying southeast of Tuxpan, between the Rivers Nautla and Tuxpan.

Vanilla grows more or less in a wild state in the low hills, and with such abundance that it perfumes the air in the vicinity. Formerly this wild vanilla was considered common property. A French colony established on the banks of the Nautla River, which engaged in the cultivation of vanilla on a large scale, met with very satisfactory results. The vanilla grows best in rich, sandy soil not drained too thoroughly. When growing wild it is susually sheltered by the trees of the forest, and in the state of cultivation it is protected by trees planted for that purpose. The temperature most favorable for its production is about 85 deg. F. It grows best at an altitude of 1,000 feet above sea level. The character of the soil, the temperature, humidity, etc., influence the quality of the vanilla, its aroma, and its strength.

There are different varieties of vanilla in the vicinity of Misantla, komon as the Misantla beans, which have a coarse bark. They are not so plentiful • nor are they considered so good as the Papantla bean. These indigenous varieties are the cimarror, the mestiza and the mansa. When they are cured only an expert can distinguish between the various classes. There is also a wild bean known as the vanilla platano, which the Indians eat. This differs from the ordinary vanilla above described (plantifolia) in that the plant is much smaller but has larger leaves.

Vanilla ripens most extensively in January and February. However, there is so much demand for the fruit that for many years crops have been prematurely harvested in October and November. As a result the beans weigh a pound less per thousand than they would normally. In compliance with an order of the government, the authorities were formerly instructed to prevent the harvesting of unripe fruit, but this order has not been enforced. A great deal of that which is produced early is stolen by natives, who realize that they can place the product on the market to good advantage. Many planters have their domiciles and headquarters at a considerable distance from their plantations, and in order to avoid the plundering of their crops they cut the vanilla early, rather than be deprived entirely of the fruit. Onc of the great problems of the owners of vanilla plantations is to provide against the robbery of their crops.

For commercial purposes vanilla is divided into four classes: The large-fine, the small-fine, la zacate and la hasura. The large-fine and small-fine are practically of the same commercial value. The former weighs from 10 to 12 ounces, and each bean is about 20 centimeters long; the latter is from 10 to 15 centimeters and its weight is almost equal to the large-fine. The zacate, which is a large vanilla bean weighing more than the former two, grows more abundantly along the roadsides in the warm and hot regions of Mexico, where formerly its fruit was considered to be without commercial value. Because of the fact that the United States buys most of the vanilla of Mexico the dollar is the basis of price, both for buying and selling.

During 1919 the following exports of vanilla were made to the countries listed in kilos: Cuba, 19; Spain, 631; United States, 193,663; France, 3,087; Great Birtain, 1; Italy, 1; Argentine Republic, 1; total, 197,403. The total value was 2,333,264 peess.

KEEPING ACCOUNT OF EMPTY PACKERS

System of Accounting for Medium Sized Factory Discussed —Small Rental Charge On Delayed Tubs Advocated

By C. J. O'Neil Of the O'Neil Dairy Co., Ames, Iowa

From an address delivered at the annual convention of the Association of Ice Cream M'irs of Iowa

My remarks will therefore be given in two divisions: first, those dealing with the technique of the subject and second, those touching the matter of some constructive action on the part of the association aiming to eliminate the losses which result from our present lack of a definite policy regarding the return of empty packers.

We take the first step in keeping track of any particular tub when the number and name are placed upon the tub. If the number is burned or stenciled upon both sides of the tub much time will be saved in making the records. The person in the office who takes the orders must be alive to the fact that the huyer is about to receive a loan of equipment to the value of \$9.00 for each five gallon order and exercise care in securing the name, initials, address and number of rural route if the order goes directly into the country. A mistake in any of these particulars will often result in the loss of a tub or long delay in returning it.

The order properly written up, the matter of tags is in line for consideration. These should be strong enough to stand considerable rough usage and have a well protected eye and strong wire fastener. The tag and detachable stub are duplicates with the exception that the stub has a very important space called "days out."

Filling out the tags is a very important operation. If they are written up as the orders are received a great deal of valuable time will be consumed at this task. Also, there is the chance of making mistakes in names and addresses when tags are written in a hurry just before train time. To make sure that our tags are properly and legibly written we have a rubber stamp made with the name and address of each wholesale customer. In leisure moments tags for each customer are stamped and filed away in alphabetical order. Then after the invoice for an order is written it is only a matter of a moment to reach the tag file and take out the required number of stamped tags. We have found this feature of handling the tags a wonderful help in our business.

The invoice is placed in the tag envelope, the date stamped on both tag and the detachable stub. After placing just the right number of tub tags and shipping tags in the envelope the whole is sent to the shipping room. By placing just the right number of tags in this envelope it is quite certain that a customer will not be shipped more or less packers of ice cream than the invoice calls for. In the shipping room the number of the tub is written on both the tub tag and the detachable stub and the latter is torn off and becomes the original invoice, so to speak, from which our records regarding the tub are to be made. Here we come up against the matter of deciding what records are to be made from this tub and how it is to be filed for future reference.

Our firm has tried several ways of filing these stubs but have settled on the visible file as serving our purpose best of anything we know of. At the time of filing, two distinct records are made from the stub; one on the "individual tub cards" which are in the file in numerical order, and the other on the "customer's tub record," which are in the file in alphabetical order. The tub record calls for three entries: Date, Sent to and Date Rtd. The customer's record calls for three entries: number, Date Rec'd, Date Returned. In making the entries on these cards the stubs are sorted out by customer and the entries on customer's card are made first. Then the tub cards are posted by number and the stub filed in with the card of the corresponding number. This completes the checking-

When the tubs come back the numbers are written upon the checking-in form. This card has an eye for hanging up and just a certain place near the loading platform to hang on. It must be on this certain nail with a heavy bur on top of it to prevent the wind from blowing it off and resulting in the loss of the record. At the end of the day this "checking-in" card goes to the office and the numbers are checked in on the file at the same time removing the corresponding stub. The stubs are sorted by customer and the numbers credited as in on the customer's record. The whole process of checking-in is done in a very short time. Note that it is not necessary to stop in the busiest part of the day to check in tubs. Once the number of a tub is placed on the checking-in card the rest of the work can be done while the manager is resting in the quiet of the evening after the employees have gone to their recreation. In large plants with regular bookkeepers the checking-in can be done as the office force gets the time.

Now we have made card records and still have that detachable stub on hand and ought to do something more with it. Keep it in the back of your mind for a moment and consider our card records. They show us what tubs are out, who has them, and how long they have had them. It teaches you to know which customers are returning tubs promptly and which ones are storing them for you, waiting for the cans to rust and the tubs to dry out and hoops fall off. The records show you what service you are securing from your tubs. Many of the tubs have been shipped out twenty-five or thirty times. In some instances one tub has carried 150 gallons of ice cream out this season. The records

show us these things but they do not show us how to get the tubs returned. Here we come to the second part of this paper. Keep that detachable stub in mind, we will need it again.

Once you are in possession of the information your mind naturally urns to thinking about what can be done't to get them back. What can be done't You can write cards and explain to your customers the great loss you suffer from delay in returning tubs. You can be a little more aggressive and call up the customer on the 'phone. Call him by his first name and remind him that you are just out of empty tubs and would please like to have him send in just a few if possible. Such methods have never obtained any worth while results for us.

In trying to make a satisfactory answer to the question of what can be done to get our tubs back, fortunately we are not left alone and unguided by the experiences of others. Many other lines of business have the same problem. Bread baskets, laundry baskets, pop eases, oil barrels and metal cylinders used to ship various gases, present the same problems as the empty ice cream tub. Since we ice cream men are especially interested in Co., at this time we can draw upon the experience of the Co. manufacturers for some valuable empty-container experience.

Cos is shipped in a steel cylinder weighing about 70 pounds and containing a net weight of twenty pounds of gas. Like ice cream, it is sold largely through jobbers or dealers. For a number of years they sent out these drums juts like ice cream men send out tubs and trusted to get them back. But during the war a dark cloud appeared on their bright sky. The War Industrial Board ordered that no more steel be used to make the drums. The gas manufacturers faced the problem of doing a greatly increased business on their present stock of cylinders. Plainly they were up against the proposition of making the available cylinders move. They called a meeting of their trade association and evolved a plan of action which, briefly described, was to hire men to go over the country, search for empties and ship them back. The searchers had to be diplomats, and get the empties without hurting any one's feelings. This plan was fine for the jobhers and retailer because it placed all the burden of returning empties on the manufacturer, just as it is now on the ice cream manufacturer. This plan proved to be too expensive and was quickly abandoned. Another meeting of the trade association and the whole matter threshed over again. They were forced to get results by a cheaper method and this they did by means of a rubber stamp, an ink pad and co-operative effort among the members of their association. The rubber stamp, the pad and the co-operation enabled them to tide over the erisis created by a shortage of steel.

The magic stamp places the burden of returning the empty just where it belongs—that is on the person or firm who has possession of the empty. Here we have the cardinal principle that must be at the bottom of any effort to bring about the prompt return of empties.

Think again of the detachable stub. It has a place to enter the number of days a tub has been out. As these stubs are taken from the file on being checked-in how simple it would be to make an entry showing the length of time since a given tub was sent out. For example, suppose the association rule that a rental of five cents per day be charged on all tubs out over ten days. All these stubs having a number of less than ten are filed in a dead file and you may put them out of your mind. On all having a number greater than ten, a rental is figured at five cents per day and an invoice mailed to the customer for the amount of his rental. The bookkeeping is very simple and it is safe to say that after this plan was in operation for a short time only a few stubs would have a number of days out greater than ten and only a few of these stubs would enter into our rental bookkeeping. can we not look forward to something of this kind in Iowa. I say look forward because I know that we should not plunge into it before we are ready. Our tub problems are solvable and the application of knowledge, business principles and co-operation will solve them.

TRADE ASS'NS APPROVED

The general functions and activities of trade associations were discussed at a conference between Secretary of Commerce Hoover and a committee representing the American Trade Associations Executives. The executives 'association is made up of representatives of old and established organizations of manufacturers and distributors of single lines of goods or services.

Representatives of the trade associations assured Mr. Hoover of their hearty approval of his recent statement in which he set forth the position of the Administration respecting trade organizations. They were told by the secretary that he was convinced that trade bodies have contributed largely to efficiency in industry and that collective effort, within the proper lines, has the approval of the government. A smaller number of associations, Mr. Hoover said, have engaged in questionable practices.

The Commerce Department, Mr. Hoover said, intends using the trade associations as one of the points of contact between the government and industry. The association executive expressed a willingness to cooperate fully and voiced the hope that such cooperation would bring a uew era of understanding between the government and business.

Mr. Hoover expressed the belief that one result of cooperation by the department with the associations would be the furtherance of plans for giving wide distribution to helpful production and distribution statistics. He indicated that figures given by the industries to the department would be regarded as confidential and that use would be made of them in no manner that might be objected to by the industries.

A MORE LOGICAL LEGAL STANDARD FOR ICE CREAM

Wisconsin College Professor Advocates Standard That Defines Food Value of Ice Cream in More Definite Manner

By H. H. Sommer

Assistant Professor of Dairy Husbandry, University of Wisconsin
From an address delivered at the annual convention of
the Wisconsin Association of Ice Cream Manufacturers

In addressing this convention, I chose the topic "A More Logical Legal Standard for Ice Cream" not because it might prove to be a popular subject with you, but because it is a subject to which we should give more thought. It is possible that this question may be forced upon you by agitation from other sources. It may come up before our legislature at some time, and at that time, you, who are so vitally interested in the industry, should be ready to make your recommendation.

Our present standard is illogical. The purpose of any government standard for foods is to control their composition, and in that way insure the consuming unblic that it is getting the proper amount of the valuable material in the food product. Our present ice cream standard does not accomplish this. Ice cream contains varying amounts of air and is sold by the gallon; yet our standard does not take this into consideration, but merely requires a certain percentage of fat by weight. As far as the law is concerned, the ice cream mix containing the required amount of fat may be frozen solid without any air, or it may be blown into bubbles and sold by the gallon. From this, it is apparent that our present standard does not determine how much valuable material the consumer is getting per gallon of ice cream

This state of affairs may at first thought appear advantageous to the ice cream manufacturers; yet on taking a broader view, we can see that it may have a deleterious effect upon the industry as a whole, and indirectly upon every member.

As long as there are no restrictions on overrun, there is always the temptation ever to increase the swell by shipping in more air. A certain amount of air is necessary to make the product palatable, and to attain the best quality; yet the tendency unmistakably has been to increase the yield at the expense of quality. This ice cream with an excessive overrun does not meet with the approval of the public; it does not stimulate the enflusiastic use of ice cream; it hinders the growth of the industry.

The lack of a standard which guarantees a certain amount of valuable material per gallon, causes a lack of confidence in ice cream as a food. This also hinders the growth of the industry.

The growth of the ice cream industry depends upon the attitude of the public. If it regards ice cream as a confection, as a luxury, the development of the industry is impeded. If it regards ice cream as a food, the industry has a great future. Ice cream can properly be regarded as a food; but its acceptance as such by the public is unoretain. The apparent diffidence of the public is undoubtedly partly due to the illogical legal standard, and could be dispelled by a standard that defines the food value of ice cream in a more definite manner.

All our standard food substances have to meet very definite requirements as to their composition. Ice cream is capable of far greater variation in composition than any, yet we have very inadequate control over it. We cannot expect the public to regard ice cream seriously as a food until we regulate it like a food.

In attempting to increase the sales we emphasize the food value of ice cream in our advertisements. Such advertisement lacks effectiveness as long as the ice cream is not regulated as a food. A logical legal standard that accomplishes this will give impetus to the recognition of ice cream as a food, and will stimulate the development of the industry.

I do not wish to set forth a standard dogmatically as the only logical standard. My object is rather to stimulate thought on this subject so that we may be ready when the occasion arises to make our recommendation.

Various remedies have been suggested such as setting a limit to the overrun, requiring a gallon of ice cream to have a certain weight, or even requiring ice cream to be sold by weight instead of by volume.

To regulate it by limiting the overrun would be to restrict the variation in solids content of the mixes. All mixes, regardless of solids content would have to conform to the same limit in overrun. This would be to the advantage of those who use a very low solids mix, and to the disadvantage of those who use a high solids mix. Such a standard would be too inelastic, and would not define the food value of ice cream in a very definite manner.

The objections to requiring a gallon of ice cream to have a certain weight, and to requiring ice cream to be sold by weight, are very apparent. They have been pointed out before and require no further dis-

The only remedy suggested so far that would accomplish the desired end is to require a definite weight of fat and solids in a gallou of ice cream. This idea has been suggested before and I am merely bringing it to your attention. This standard would define the food value of ice cream in a very definite manner. It would be an elastic standard. The permissible overrum would vary with the solids content of the mix. To illustrate this, I have prepared the following table:

HIGHEST PERMISSIRIE OVEREUN POR VARIOUS SOLIDS CONTENTS AND FOR VARIOUS STANDARDS

solids weight o		Highest	permissible solids o		
mix	of mix	1.5 lbs.	1.6 lbs.	1.7 lbs.	1 8 lbs
30	8.80	76.0	65.0	55.3	46.6
3.5	8.85	106.5	93.6	82.2	72.1
40	8.90	137.3	122.5	109.4	97.7
45	8.95	168 5	151.7	136.9	123.8
50	9.00	200.0	181.2	164.7	150.0

In the table the last four columns give the highest

permissible overum for four different standards— 1.5 lbs. of solids required per gallon of ice cream, 1.6 lbs. of solids, 1.7 lbs., and 1.8 lbs. From a study of this table we may conclude that a standard of 1.7 lbs. of solids per gallon of finished product would permit a reasonable overum.

However, the setting of the exact figures for such a standard is a matter of opinion, and can probably be decided best after a number of opinions have been expressed. The acceptance of the principle involved is the important step.

With the tentative suggestion that the ice cream standard should require 1.7 lbs. of solids per gallon of finished product, 30 per cent, of which is to be fat, I shall leave this question for your consideration.

THE SUGAR TARIFF

The passage of the Emergency Tariff Bill, with is sugar clause, brings to mind tie most important agreement affecting sugar tariff legislation ever enacted—the Brussels Convention of 1902, when ten European powers agreed to abolish bounties and to curtail surtaxes in order "on the one land, to cupulate the conditions of competition between beet and cane sugar from various countries, and, on the other land, to promote the consumption of sugar," writes Howard Elliott in the American Sugar Bulletin.

On May 5, 1902, the high contracting parties affixed their signatures to the convention. On September 1, 1903, the treaty went into effect. Eleven years later four of the signatories were arrayed against three others in the Great War, and three were neutrals in the struggle. The ten countries which originally agreed to the Brussels Convention were Austria, Belgium, France, Great Britain, Germany, Holland, Hungary, Italy, Sweden and Spain.

The Brussels Convention came as the climax to a struggle between beet and cane sugars, which had been swaying back and forth for several decades. A late comer in the field, the sugar beet industry which was inaugurated and fostered by Napoleon I suddenly sprang into prominence about 1870 and became a dangerous rival to sugar cane, Napoleon's rule was at its height, beet sugar had won the supremacy over cane in France. Napoleon's downfall in 1814, cane sugar again gained the ascendency in all parts of the world. The abolition of slavery in her colonies by England in 1833 and by France in 1848 raised the cost of cane production, and the granting of bounties stimulated beet growing. Nevertheless, beet never achieved supremacy until the last years of the nineteenth century, when it took the lead in the race, only to yield it again in 1910, after the revival of Cuba from the effects of the revolution. It was during this period that the Brussels Convention came to be.

Despite political complications of various sorts, the Brussels Convention was observed, save for the withdrawal of England and Italy in 1912, down to the outbreak of the Great War in 1914. Many of Europe's richest sugar lands lay directly in the battle area. The demands on man power and the destruction of property decreased the beet production and made it easy for cane to forge far into the lead.

With the cessation of hostilities, the Brussels Convention passed into history. England and Italy had already left. Russia abandoned it in 1918. Belgium "denounced" it. Finally, the Treaty of Versailles forlade it.

A NEW FRENCH DAIRY JOURNAL By T. Mojonnier

"Le Lait" is the name of a new French jointral relating to the dairy industry. It is published at No. 2 Quait Chauveau, Lyon, France. Prof. Chas. Porcher, a distinguished anthor and investigator, is the editor in chief, and he is assisted by a corps of collaborators from various parts of Europe. The plan of the publishers is to issue not less than ten mumbers per volume, on evolume to appear each year.

The aim of the editors is two-fold. First, to use "the Lain" as a medium for the dissemination of knowledge of the dairy industry from numerous view points, including both scientific and practical problems, covering a wide range of subjects. From this standpoint it will prove of worldwide interest and it should find readers wherever the dairy cow is kept. Second, to use "Le Lain" as an organ for encouraging the development of the dairy industry in France, and also the use of more milk and milk products among the French people, all of which are most worthy aims.

The high quality of the first number gives good promise that it will in the future reach the mark set for it by its publishers.

The dairy industry, the world over, owes a great delt to France. The discoveries of Pasteur practically applied in the so-called pasteurization of milk have made his name a household word, especially in the United States. The homogenizer is another French invention that has brought great henefit to the dairy industry. "Le Lait" is destined to increase our debt still more.

It is hoped, therefore, that the latter will receive from the United States such moral and financial support as may help to insure its success.

DOUGHBOYS LIKE SWEETS

American soldiers, whose predilection for sweets has often caused Frenchmen to gasp with amazement, are still world champions in this respect, it is shown by figures compiled at the Cafeteria, the largest restaurant in Coblenz under the management of the Y. M. C. A.

During the last year, American doughboys ate at that restaurant alone 624,906 dishes of ice cream, 233,138 puddings, 475,843 tarts and cakes, 310,874 cookies and doughnuts, 63,151 cream puffs and eclairs, 66,551 choochet sundaes, 61,378 pies, 223,787 apples and other fruit, 282,741 glasses of lemonade and 43,792 oranges. Eggs were also "played across the board," the total number consumed being 211,195.

UNIFORM ACCOUNTING IN ICE CREAM INDUSTRY

Certified Public Accountant Approves of National Association's System-Advocates Exchange of Information On Costs

By W. D. Whitcomb
Of Whitfield, Whitcomb & Co., Portland, Ore.

Prom an address delivered at the annual convention of the Pacific Association of Ice Cream Manufacturers

If the famous Egyptian Sphinx ever does change her mind and talk, there are two questions some man will ask her. One is, "What do the ladies carry in those mysterious black vanity boxes?" and the other is, "Why do business men in the same line of business fail to cooperate for their mutual benefit?"

It will never be given to mere mortal man to solve the first mystery. Doubletes it is better so. To the second mystery, however, one answer suggests itself. Business men in the same line of business fail to cooperate because they do not speak a common language.

The Tower of Babel was never completed. The workmen were skilled builders and they had plenty of bricks, but they had no common language. They could not understand each other and the work had to cease. The inventor of Esperantio made one fatal mistake. He might better have devised a universal language for each business industry.

But why this need for a universal language as a means of cooperation? One reason is common sense, but, if that be too common sense a reason, there remains another reason, and that is self-preservation. Years ago, in the dark ages, almost beyond the memory of man, there existed upon this earth a brewing industry. Gone it is, leaving only a memory and a longing. It departed hence because those controlling that industry ignored that silent but most potent force in the world—public opinion.

Years ago the famous president of a famous railroad said, "The public be damued," and today that public, through the Interstate Commerce Commission, dictates what rates that railroad shall charge.

The day of adding to the price "all the traffic will bear" is passing. If your product he classed as a necessity of life and the public so taught, then that public will assume the right to protect itself against high prices insofar as they are due to inefficiency within the industry. If your product he classed as a luxury, the need for self-preservation still remains, for, with the financial and general business outlook as it now is, luxuries will soon become luxuries in fact as well as in name and the then curtailed and limited demand will be supplied by the firms whose prices do not have to be artificially stimulated to enable them to carry a burden of inefficiency.

If ice cream is a necessity and the people should ice cream is a luxury and the people on ort need to have it, then be prepared to justify your prices; if or all luxuries and to steep declining demand for all luxuries and to stimulate that demand. The only way in which the demand for a luxury can be stimulated in stringent times, such as we now fact is by holding the price to absolute rock bottom.

Therefore, whether your product be a necessity or a

luxury, the temper of the people and the financial outlook call for preparedness.

Mistakes of judgment have been made. Maine once went Democratic, but past mistakes do not justify making present mistakes, so why continue to ignore the situation as it is and run the risks entailed, when the remedy is so plainly at hand?

The remedy is to put the vital statistics of your industry into such form that you may know its innermost facts and correct the existing faults.

Suppose each individual manufacturer had his statistics in such orderly formation (and that's a mighty charitable supposition, for they haven't and you know they haven't, but suppose they had) and in an attempt to justify prices or to stimulate demand each was to fire his broadside in his own way, without standardization of ammunition or uniformity of campaign, the chances are they would fire at about one hundred different angles and annihilate each other. The different answers given to the same question relative to any one item of operating cost, while all honest, would probably be of such wide variation, because of different bases used, as to seem to perjure every answer.

The day has gone when any business dealing in even a near necessity of life can arbitrarily say, for very long. "The price must be so much," and in its place has come the day when such a business must be able to say, "The price must be so much because it is the lowest price at which a reasonable return on investment can be made," and, furthermore, that business must know, and when necessity arises, be able to slow, that its methods of operating contain no items of waste, and no inefficiency of management. These are far too vulnerable spots to withstand long the attacks of a suspicious and critical public.

There is no panacea to cure all ills to which your industry is heir, but there is one remedy at hand and it is labelled "Standardization." Given a uniform system of accounts generally adopted throughout the industry; given uniform monthly reports based on these uniform accounts; and given composite average reports, based upon these individual uniform reports, then, you, as individuals, will be able to locate and eliminate waste. When you have done so, you can say to the consuming public and to your critics—"Here are facts."

Uniform accounting is eminently practical in your particular industry, because you deal in a uniform product. It is not so much to the point whether taxes on plant and equipment shall be classified as Manufacturing Expense or General Overhead as it is that it shall always be classified the same, so that when you say your Manufacturing Expense, for axample, bears a certain ratio to your Turnover and

your neighbor says that his bears a radically different ratio, you can both know that you are talking about one and the same thing.

A second and closely related step, which automaically follows the installation of uniform accounts, is arranging for a clearing house for statistical information. Interchange of ideas is of paramount importance. Without inlet or outlet water stagmates. You may put your own house in order and your records may furnish you with excellent information relative to your own business, but you are still without a standard yardstick for measuring your operations. Without the yardstick you can only measure your growth of your own shadow, which is unreliable because it changes as you change.

Agreement to interchange reports is of no value unless you can know that the reports received are built to the same scale as your own. Furthermore, the rush of business, the distance separating firms which are not in competition and the natural rivalry of firms in the same location, absolutely preclude the unrestrained interchange of confidential information, unless a confidential clearing house for handling same is provided. You have probably long since realized that three can best keep a secret if two of them are dead. If uniform reports can be turned in to some confidential clearing house and there consolidated and if, from that clearing house, there go out to each member a report showing the average of each item of income and expense reduced to a common basis, then and only then, can each firm have a reliable criterion whereby it can judge its own efficiency or inefficiency. At the same time, under this plan, one's affairs do not become known to his competitors nor his competitors' to him.

A uniform system is practical nationally for your industry if made clastic so that it can be applied in modified form to the smaller manufacturers. The clearing house for statistical information, however, must be restricted to a smaller area, so as to embrace firms doing business under practically the same geographical, physical and local conditions. The composite average reports from different localities can easily be consolidated into one national report at any time such a report would be of value in a national delucational campaign or for national legislation.

This plan for uniform accounting, uniform reports and composite average reports is not a fantastic dream, nor is it in the experimental stage. It is a proven reality in daily operation and a fixed adjunct to various industries which have adopted it. The idea, because of its value and its logic, is one of the outstanding features in business progress. The lumbermen, hotelmen, jewebers, confectioners and a score of other businesses have gotten the vision. Even industries dealing in a variety of products, thereby lessening the adaptability of the plan, are trying to devise ways in which it can be applied in modified form to their needs.

Reference to one of the specific current instances with which the speaker is familiar will be pardoned, as it will make it possible to explain the plan in concrete, tangible form.

Sometime ago an industry here in Portland was ac-

cused of profiteering. The dealers replied that they were not even making expenses. The usual hue and cry was raised. The dealers resorted to display ads in the daily press to state their case. The housewives' councils and women's clubs resorted to indignation meetings which grew into mass meetings; suit for profiteering was threatened by the City Attorney, District Attorney and United States Attorney; charges and counter were hurled; the din grew louder, the excitement greater and the situation was fast developing into one of those nice little riots which we Americans enjoy so much, and, as they say in the society news, "a pleasant time was had by all." At this point the Mayor of this City stepped in, appointed a committee, and, in his usual fearless, square manner, said to the committee, "I want the facts-the absolute facts irrespective of whom they hurt or whom they please."

The committee expended an enormous amount of time and effort; practically all of the dealers cooperated wholeheartedly, though of course, a few were found who knew more than Experience has been able to learn through all the Ages. The committee found good records and mediocre records. The majority of the records in that industry, like the majority in your industry, were woefully inadequate to show the real facts in the case. It constructed new records and. from the tangled mass left by the cyclone, it found that here and there exceptional ones were making a small profit, due to natural insight and business ability always possessed by a few. It found that some were possessed of so little ability that they could never make money consistently at any price. And it found-this was the significant fact-that the industry as a whole was losing money. This fact was made public without necessitating the injustice of disclosing any one firm's affairs. The public accepted the findings and once more peace and quiet reigned over the troubled land,

Right there that industry realized that side-stepping is not a safe procedure and that the general public has learned a lot about side-stepping since the days when the three-wheeled velocipede was first regarded as a menace to pedestrians. There and then that industry made a resolution, antedating it to New Years, never again to be caught in a similar predicament, never again to risk its very existence upon the chance appointment of a committee which would take the trouble to ascertain facts which the dealers themselves were not able to present. Then and there they arranged to have a uniform system devised and put into manual form so that changing office staffs would always have a fixed guide as to classification and procedure. Then and there they arranged for a confidential clearing house independent of any one firm-in fact independent of the industry itself. Finally they arranged to turn in monthly statistical data, automatically available from the nuiform system, and to receive back from the clearing house each month a composite report, reduced to cost per unit and showing, on the copy sent each dealer, his own costs in comparison.

The practical working out of the plan for drafting a composite average report is intensely interesting. All dealers in one particular line were supposed to be engaging men belonging to the same organization and paying the same wage scale, yet in no two firms were the arrangements identical.

In all industries where confidential clearing houses are operative and composite average reports are compiled it has been found that each month each firm concentrates upon reducing its costs in the items in which it exceeds the average, only to find the next month it is higher than the average in items in which it previously was lower, due to the fact that the others have been doing the same. So the endless chain goes around, each firm spurred on by the efforts of the others, and all reducing expenses, eliminating waste, thus benefiting themselves, the industry, and, in the final analysis, benefiting the public.

One Western Lumbermen's Association for example has adopted a uniform system, has had same reduced to manual form and has arranged for a composite, monthly average report to be compiled. This printed report shows that fifty-three lumber mills in that particular association turned into the clearing house their statistics for the month of August and received back this printed report showing the composite average cost of all fifty-three mills in each item of operation. The report provides a blank column wherein each mill can insert opposite each average cost item its own cost and know beyond peradventure of a doubt its own efficiency. Any business man who is given such information as that and finds his cost out of line with the average and who refused to admit his own inefficiency and to attempt to remedy it is like unto the fond mother who, seeing her offspring marching with an host of returning heroes exclaimeth; "Oh! everyone is out of step but Johnny.

Your National Association is one of a hundred or more national associations to realize the value of a uniform system and have had one devised. As members you can secure this by the mere asking and yet apparently few of you have done so.

Any uniform system is, however, merely a means to an end and should not be the entl itself. The real value to you lies in compilation and distribution of the average costs thus made available. Varying freight rates, labor conditions, density of city population and other factors render national average figures non-comparable.

The establishment of clearing houses for information is a problem which must be handled by a smaller unit such as this Pacific Association and should even then subdivide into individual states.

Adequate acounting for individual firms was one of the outstanding features in the business progress of yesterday. Uniform accounting for industries is one of the outstanding features in the business progress of today. Exchange of uniform information will be one of the outstanding features of the business progress of tomorrow.

Where do you as members of the Pacific Ice Cream Manufacturers Association stand? Are your thoughts back in the yesterdays or are they wrapped up in the immediate todays or are they planning for the boundless tomorrows? Are you basking in the sunshine of your accomplishments in the past or are you fulled into a false sense of security by your further progress in the present, or are you alert and eager for the real forward step of the future?

Is it worth a little effort to eliminate unnecessary costs and thereby be able to stimulate demand without wiping out your small margin of profit? Is it worth a little effort to know how efficient your plant is in every part of its operation when compared with that of the average plant in your industry, operating under similar conditions? Is it worth a little effort to insure reasonable profits?

All that has been proven practical and possible through the medium of the statistical clearing house.

SUGAR HAD HIGHEST VALUE

Sugar represented a far higher valuation than any other single commodity imported into the United States during 1920, according to figures compiled by the foreign commerce department of the Chamber of Commerce of the United States, which have been published under the title, "Our World Trade in 1920".

According to these statistics the value of sugar imports was \$1,07,163,456. Next in order of importance came raw silk, amounting to \$28,4891,082, and after that, coffee, representing \$252,450,651. Total imports are figured at \$5,279,398,211. Sugar persestent, therefore, almost one-fifth of the total

These figures, being based on official government reports, include sugar brought from the Philippines, as this is treated as an import by the government. They do not include sugar from Hawaii and Porto Rico. Some indication of the purchasing power of the sugar countries supplying this market and of the part that sugar plays in United States commerce is given by the fact that the Chamber of Commerce figures rate Cuba as the fourth largest buyer of American goods, being exceeded in this respect only by the United Kingdom, Canada and France.

Exports to Cuba totalled, according to these figures, \$515,082,549. The total exports of the United States to the four largest buyers of South America, namely Argentina, Brazil, Columbia and Chile, amounted to \$484,028,783, or less than the exports to Cuba alone. Exports to Cuba in 1920 are calculated to have shown an increase of 85 per cent. over those of the previous year.

The average price paid for sugar brought into the United States in 1920, according to the Chamber of Commerce, was 12.4 cents a pound. Imports of sugar showed a 15 per cent. increase over the 1919 figures, in quantity, and an increase of 77 per cent. over the pre-war average of the year's 1910-1914.

Judged by value of imports, according to the figures, Cuha, by reason of the heavy import of its sugar, assumed the place of first importance in American foreign trade, wresting this position from Canada, despite the fact that Canada's shipments to the United States showed a gain of 24 per cent. over the 1919 figures. Imports from Cuba increased 73 per cent. over 1919 and reached a total value of \$722,000,000.

GOOD LUBRICATING OIL ESSENTIAL

Care Should Be Taken In Its Selection Considering Viscosity, Flash and Flame

A good lubricating oil is as essential to the proper running of a motor-truck as a good engine.

A general definition covering lubricating oil states that where one metal surface moves over another, it is the function of this oil to keep these surfaces from rubbing against each other. Care must be taken also in choosing an oil that will not permit of much friction in the film of the oil itself.

A bearing is properly lubricated when, assuming the oil to be the best that can be had, there is no metal surface touching another metal surface. Different oils must be procured to use on bearings of different pressures and speeds.

There are different terms used to designate the lubricating oils in relation to their suitability for use with different metal surfaces and the attendent pressures and speeds. These terms are viscosity, flash and fire.

By viscosity is meant the body or fluid properties of the oil. This viscosity is determined in the various laboratories by means of the viscosimeter, of which there are several types in use.

Because of these several types of viscosimeters, it is almost an impossibility to take oils tested by one laboratory as a standard for other oils. To obviate this difficulty, when buying any large quantities of oil, it is advisable to ascertain with which type of viscosity machine the test has been made, and also the time and temperature of the oil test.

This test is made to find the time necessary for a given amount of the oil to flow through a fixed opening, the temperature being fixed and known. For example: Take an oil of 300 deg, viscosity at 100 deg, F. This means that it requires 300 seconds for the standard amount to flow through the opening at a temperature of 100 deg. F. Most of the machine oils are tested at 100 deg. F. and many cylinder oils at 210 deg. F.

A method has been found of making a rough comparison of the viscosities of two or more oils. An equal quantity of each of the oils is dropped on a smooth flat metal surface. A fixed time is set and the distance each oil spreads is measured. The oil with the lowest viscosity is the one that spreads the farthest, for it has less body and more fluid.

The point to be borne in mind by the purchaser is to procure an oil of the proper viscosity at the temperature at which he expects to use it. He must remember that the viscosity of an oil varies with the change of temperature and that two oils of the same viscosity do not change the same amount with a given temperature variation. An oil at 100 deg. F. with the proper viscosity may be used at a lower temperature. The viscosity of the oil then can only be determined by the conditions relative to its application.

An oil of heavy viscosity must be used with heavy maeffinery and an oil of slight viscosity is required for use on light, high-speed machinery. Heavy oils on light-speed machinery create intense friction on the oil film and make it impractical for use. The proper oil for light machines must show a minimum wear on the bearings and a minimum friction load. A thermometer placed in the oil well will give the amount of friction.

Much discussion has arisen about the actions and properties of the flash and fire points of lubricating oil and most of the solutions offered have been theoretical.

The flash point is the temperature at which the oil vaporizers enough so that the vapor collecting on the surface can be ignited by the application of a flame. The fire point is the temperature at which there is enough vapor collected to support continuous combustion—the vapor being given off as fast as it burns. These are simple concise definitions and ought to be easy to distinguish.

Such is not the case, however, for many engineers and machinists fail to realize that a comparison of these two points is contingent on the sameness of all tests. Several factors must be taken into considcration: the atmospheric conditions, the size of the cup, open or closed and the proximity of the flame to the oil.

The terms flash and fire specify the qualities. A person who uses lubricating oil should know at what temperature the oil will flash and when it will burn continuously. In this connection some states have passed laws specifying the flash points for petroleum products.

Sometimes the temperatures of many steam and internal combustion engines are very high and are way beyond the flash and fire point of the lubricating oils. Many oils are on the market that can wildstand this extreme heat. Take for instance the use of lubricating oil on some internal combustion engines, the temperature in the cylinder of which runs as high as 3,000 deg. F.

The oils become vaporized when they come in contact with the hot surface of the cylinder and pass out with the exhaust. Low flash point oils vaporize quicker and more completely than those of a higher flash point. When the vapor passes out of the eylinder with the exhaust it does not leave a residue in the chamber and no trouble from the carbon ensues. Tests have shown that although a low flash oil is the best in gas engines a higher flash oil will become a low flash oil after being used in any engine about a third of the ordinary time. It has also been proven that the oil does not vaporize when entering a cylinder full of steam in the high temperature steam engines and this also applies to the lower temperature cylinders.

From the results of these tests the conclusion may be drawn that the best oil for a particular kind of engine or machine is determined by the mechanical condition, rather than any consideration of the flast and fire points. The oils principally in use now are of a lower flash point than formerly. The real test has been the demonstration in the plant and the relative reductions in friction loads and the wear on the bearing surfaces.

The purchaser must get rid of the idea that oil is oil. There are oils that are good for internal combustion engines and there are oils that are good for small induction motors, but there is a vast difference in their viscosity and flash and fire points.

The amount of Indicating oil used in a motor truck is an insignificant feature of the operating cost of the car. No question should be raised as to the price of the oil. The hest that can be had ought to be purchased. Good oil is worth paying a high price for because it will do away with the expense of rebored cylinders and oversized pistons. Poor lubrication will decrease the efficiency of the engine and will cause it to consume more gallons per 11. P. than is necessary.

Judgment must be displayed in the selection of oils. There are many grades, blends and brands to choose from. Do not select an oil with a viscosity of less than 200 at 70 deg, and having a flash point of less than 350 deg, if the intention is to use it on an internal combustion entain of any type.

In order to determine the proper lubricating oil for an internal combustion machine, different oiling systems and the clearance between moving parts must be considered. In the full splash system, oil that will readily vaporize must be used. The splash and pump system calls for an oil of heavier viscosity. A medium heavy oil can be used in the splash and semiforce feed system. The best results in the full-force feed system will be secured from the use of a heavy oil

The same rules covering oil lubrication apply to differential lubrication and the use of gear greace. The use of cup grease is not recommended for after it lecomes but it will not return to its original state. The water in the grease causes the soap and hydrocarbon oil to separate if heated to a very high temperature. Graphite grease is not even as good because of the tendency of graphite to precipitate.

The best differential grease is that made from the straight mineral product by the refining or cleansing method. Another good grease is that made from sponge or fibre grease by adding some ingredients to the cnp grease. Both of these will give good results in any machine that generates the heat that will be found in a motor truck gear box.

A car owner is wise if he does not consider the cost of the best qualities of oil and grease lubricants, for they are only small items compared with the cost of fuel, repairs, etc. It pays in better service and greater longivity of the car.

FOOD VALUE OF MILK AND MILK PRODUCTS

An Address Delivered At the Annual Convention of the North Carolina Ice Cream Manufacturers Ass'n

By Martha Flax Andrews

Home Demonstration Agent, Lumberton, N.C.

To the North Carolina Ice Cream Manufacturers' Association and its friends, may I express my greatest delight in being called upon to discuss with you what I consider the most valuable and most vital food element now available for human consumption. Coming to you from a field of service where I have ado opportunity to see the results of the use and lack of use of this important food in the homes of the people of my county, I am glad to give to you my idea of its value taken from practical life as well as from a study of nutrition

More and more I realize that into our internal laboratories there must be introduced certain food elements nicely balanced or our human mechanism will not be kept in running order. In making an intensive study of the digestive disturbances and often-times cases of undernourished children I trace them all back to lack of regard for this internal laboratory and to the foods which when introduced therein will produce health, vigor and mental power.

I have found clean sweet milk the only ideal food which contains all the food elements, carbohydrates, proteins, fats and vitamines—the carbohydrates in the form of milk sugar, the protein from the curd and fat in cream and butter. The vitamines are that little mysterious something which our chemists say are necessary food elements which are not found in protein, carbohydrates and fat. This important food element being found in milk gives to it the distinguished element of being a perfect food. Our chemists have proven to us that white rats fed on protein, carbohydrates and fats alone will not grow, but when milk or butter is introduced they grow nicely. The discovery of this food element vitamines, is practically new and its value is not as yet fully known, but we do know to a large extent what it means to us and we do know that it is found in milk, tomatoes and oranges. We find it in the most easily adapted way and acceptable form in milk. So then, as stated above, milk is the only complete food within its self and the one food which is absolutely essential to the progress and development of all family life.

Milk may be taken in such quantities as to nourish the body without being in combination with other foods, but this is not desirable in ordinary life and thus we learn to use it in combination with other foods and in other forms than a liquid. The many ways it may be introduced into our diet I can not enumerate, but allow me to insist on its every use in general cookery coca, soup, cheese dishes and sandwiches—and of course the one attractive and

wholesome food, ice cream. I think that we have not learned to value ice cream as a food to the extent that we should, but we have taken it along with the other drug store dainties and we take it when we are warm and need a cooling rather than when we are in need of food. But stop to think of its value when in combination with eggs and sugar and the other fine materials which go to make good ice cream. Why, it is appetizing, attractive enough and good enough for the greatest king down to the tiniest child. I was in a drug store the other day and my heart was so pained when a father brought his wife and small child to the table for what he called a drink. The mother said, "Give the baby and me ice cream," and the father in a scornful way said to the waiter, "No, give us all ea-cocola, something which will do us some good." My heart sank within me and I thought in my own soul, "A pearl cast before swine" until we educate people to realize the value of icc cream.

THE ALCOHOL TEST

The alcohol test shows good possibility as a pracpractical and reliable test for determining the quality of milk for condenseries making evaporated milk according to specialists of the United Stares Department of Agriculture who have conducted experiments at the Grove City, Pa., creamery. How generally the test can be applied will require further investigation, they say, but it is believed that it can be used to advantage in a large majority of factories. A report of the experiments has been published in Department Bulletin 944.

The quality off milk for condensaries has been tested with acid, but it is generally recognized that this method has defects, the specialists say, and experience has shown that not infrequently milk rejected in the acid test because of high acidity was fresh milk in which bacterial action was highly improbable. In making evaporated milk the most essential characteristic is the ability of the milk to withstand a temperature sufficiently high to insure subsequent sterilization without eausing an objectionable curd. The experiments show that the alcohol test will determine this characteristic in many cases where the acid test will not.

Of 90 samples of raw milk taken at the weigh room of the Grove City creamery, and representing a wide range of condition, 46 samples of the finished evaporated milk showed curdiness after sterilization and shaking. Forty-four of the evaporated milk samples withstood sterilization, showing no curdiness after shaking.

Of these 46 samples, the specialists say the alcohol the would have rejected 43 that showed curdiness after sterilization and shaking, while it would have rejected 2 out of the 44 that showed no curdiness. The acid text, however, would have rejected 18 of the 46 samples; and 21 of the 44 that showed no curdiness.

The alcohol test as used in the investigation made by the specialists was prepared by mixing equal parts of 75 per cent. alcohol and milk, and observing whether coagulation takes place. In case the milk shows a visible coagulation it is considered unsafe from the standpoint that the milk after evaporation will not stand the heat necessary for sterilization without becoming circly. The amount or degree of coagulation is shown by the size of the curd particles formed. This test, the specialists say, is practical and easy to make in the weigh room.

REFINED SUGAR MARKET

Developments in refined sugar during the week have been contrary to general expectations, states a recent sugar market report of Lamborn & Co., New York, N. Y.; the effectiveness of the new tariff was generally expected to have resulted in stimulating demand and also advancing the price, but on the other hand demand has continued to be of a hand-to-month sort and refiners have made further reductions in prices.

It is evident from the attitude of the trade in general that a hand-to-mouth policy of buying will be pursued and that few, if any, distributors or merchants will endeavor to anticipate forward requirements. It appeared that with the market steadity working downward buyers intend adhering to a most conservative policy and inasmuch as there is no indication of any difficulty being encountered in securing sufficient supplies during the remainder of the year, buyers are inclined to carry as small stocks as is nossible.

Demand has been especially disappointing, as ordinarily at this time the usual hot weather inquiry is developing or well under way. Some of the trade feel that the slowness of inquiry at present is indicative of the fact that many distributors and consumers are still carrying stocks purchased sometime ago and are more auxious to reduce same than to make further purchases. It is also possible, too, that the economic situation and the great amount of unemployment throughout the country is having its effect on consumption and there are some indications that the 'per capita consumption this year will fall off materially, especially as a result of a decreased use of sugar through the manufacture and consumption of so-called luxuries.

ILLINOIS MEETING

The last sectional meeting of the Illinois Association was held on April 19, at the plant of the DuQuoin Bottling Co., DuQuoin, Illinois. The meeting was called to discuss the various conditions that the ice cream manufacturers might have to face during the coming summer, such as the ice supply, etc. The matter of express rates was also discussed, as well as the standard bill still pending before the Illinois legislature.

By courtesy of W. R. Hayes of the DuQuoin Bottling Co. an elaborate luncheon was served, also dinner to the visitors.

-N. LOEWENSTEIN, Secretary.

THE SHORTCUT TO GREATER GALLONAGE IS SALES WORK

Many Plants Have An Output Not Near Capacity and To Close That Breach Requires Concentration On Selling Ice Cream

By William H. Duff, II.

Of Barker, Duff & Morris, Pittaburgh, Pa.

From an address delivered at the annual convention of the National Association of Ice Craem Manufacturers

One cold, rainy Monday last summer an ice cream part of your program ei

manufacturer was looking over the sales for the two previous days-Saturday and Sunday, usually good days of the week, but they had been poor ones and truly it was blue Monday for him. Finally he looked up and said, "If we just get some good weather we will sell a lot of ice cream." Many other manufacturers have often said much the same for many years. You remember Mark Twain claimed that "everyone finds fault with the weather but no one ever does anything about it." When weather is fair and gallonage good, weather is the hero. When weather is bad and gallonage light, weather is the goat. To an outsider this frequent association in the ice cream business of weather conditions and business conditions suggests that weather is the guiding star of your industry and if that were true, then your business is doomed to being a seasonal one. But in the last few years some few manufacturers have been digging into the selling possibilities with a view to pushing gallonage steadily forward more or less free from other influences and they have been finding the possibilities. They are coming to the view of the old philosopher who said. "The future is a world limited by ourselves."

For an outsider to come before you and prophesy the future of your business may seem to be impertinent but if he is supporting his prophesy with the self same factors which have made for success in other businesses, you will cheerfully hear him. Thus I commit myself absolutely to the subject of this talk. The short cut to greater gallonage is sales work, and I would go as far as a man did in an argument. Two friends had engaged in this futile pastime. One set forth his views and the other cautionsly replied, "I get your point. I think I see your argument, but"-just there the first speaker interrupted him saying, "Wait a minute, I'm not arguing with you, I'm telling you," I would go that far and so would any of you who have studied the results of sales work in other businesses. Selling is a tremendous force. A man has to sell himself to succeed. He has to convince others of his honesty and worth. In every walk of life today sales work is being utilized. The church has turned to it, and in war it was the real factor in victory. Just a year ago near the close of your convention, a little circle of manufacturers stood in the lobby of this hotel discussing the convention. The vice president of a large ice cream company said that he was disappointed in one respect. "I came here to learn more about selling ice cream. I am fairly well satisfied with our product, but not with the selling of it and I am disappointed that so little attention has been given in the program to the selling end." His wish will be gratified this year when he finds a fair

part of your program given over to the subject of selling.

If someone asks what business you are in you naturally answer the ice cream business, which means simply that you make and sell ice cream. Make the best in the world and if you do not sell it you are only furnishing another task for the sheriff. Making and selling are the outstanding work in every business. In the early days of ice cream your product sold itself but now most of you have plants with an output not near capacity and to close that breach-to secure greater gallonage, you must have sales work. We see ice cream men gradually turning their attention from the making to the selling but some still linger overmuch with the making end of it, which recalls the predicament of a Scotch lad who had imbibed too freely of one of Scotland's choice products. He boarded a train which he thought was homeward bound. The conductor asked him "Where are you going," to which he replied rather unsteadily, "I'm goin' to Dumferlin." "You're on the wrong car," replied the conductor, whereat the lad removed himself to another coach. There the conductor caught up with him and again inquired, "Where are you going," to which the answer once more was "I'm goin' to Dumferlin." The conductor once more notified him that he was in the wrong car. When he removed to another car he happened to seat himself beside a minister of the Gospel and the good man caught a whiff of his breath! "Young man," said he, "do you know where you're going," and the lad replied rather previshly, "I'm goin' to Dumferlin." you're not," said the minister, "you're going to hell." The lad rose hastily saving "Good lord, I'm on the wrong car again." The manufacturer who is concentrating on making and disregarding selling is remaining in the wrong car.

I would respectfully submit that there are two great needs in ice cream sales work today and in giving these I am again offering you the mediums which brought success in other lines. The first need is trained salesmen. The second is systematic direction of their work. I will explain simply what is meant in each of these needs. No man would send an untrained soldier into battle and it is just as great folly to send an untrained salesman into the battle of selling. Within your plant you require trained people-bookkeepers, stenographers, engineers and others. There is an even greater need for trained salesmen. When one of your salesmen faces a customer what he does and what he says represents you. That is why great corporations have their schools for salesmen and a man whom they choose for sales work must go to school to learn thoroughly the article which he is to sell and how

to sell it. He must do this before he faces customers and represents the corporation,

Every day you gentlemen receive men coming to sell you something, men who are all called salesmen but automatically they fall into two classes, one is salesmen and the other is order takers. The salesman presents his article intelligently and persuasively to you. The order taker flounders. He begins nowhere and gets nowhere. If you give him an order it is simply because you need what he At some time when you have been has to sell. talking with these men the thought may have occurred to you, "I wonder how our salesmen talk to our customers." To get an answer you could try the experiment of calling in a salesman and bidding him, "John, for the time being, regard me as a prospective dealer. Talk to me as you would to a prospect. In other words sell me our ice The way he sold you your ice cream might be a pleasant or it might be an unpleasant revelation. You might applaud him or you might feel like sending him back to school to learn his

Your salesmen go out with at least two missions. First to express to your customers an appreciation of their business. Every one likes to know that their patronage is appreciated. You do. You show it in your every day life in the stores you choose in making personal purchases. If there is a store with cool, indifferent clerks and another one with pleasant, eager ones, you will naturally gravitate to the latter. If you only receive your dealers' orders, fill them and collect for them it is a cold blooded business transaction and business does not prosper in that way. The second mission is to persuade your dealers to push ice cream. The dealer has thousands of articles in his store and he can't be expected to know much about any one. He will only push those which he is convinced are worth while. It takes a trained salesman to show him the advantages in pushing ice cream; its quick turnover. the business it begets in other lines.

I believe it is a common mistake with the ice cream manufacturers to have too few salesmen. In England during the war business men would tell you that they were dreadfully understaffed, America we express that meaning by saying we are shorthanded and the ice cream manufacturers are shorthanded in their sales forces. For instance in going over the affairs of one manufacturer recently it developed that with a gallonage of 250,000 and 300 dealers, he had just two salesmen to handle this business and one of the salesmen was not devoting all of his time to the work. How often in a year can two salesmen see 150 dealers? Then again I believe it has been a mistake to delegate various tasks to a salesman. He can't well be a iack of all trades.

The second need is systematic direction of their work. Inside your plant every employee has some schedule of duties and there is some way of checking up on the accomplishment of them. Likewise the salesmen outside should have a territory assigned to them and they should have a system of reports to show their results, and mark you, the ambitious salesman wants these reports just as much as the employer needs them. The worth while man wants to show that he is making good.

In developing ice cream to its present standard of excellence you made a scientific study of it, adopted homogenizers, overrun testers, glass lined tanks and other things. Now you should attend to developing the selling end of the business in the same scientific fashion and I believe the two outstanding needs are those given—trained salesmen and systematic direction of their work.

Once upon a time Abraham Lincoln gave a man a letter to a friend. In this letter he said, "The hearer is anxious for work. It is an unusual desire and should be encouraged." The American public have proven beyond all question that they have a great appetite for ice cream and it should be encouraged. The way lies in sales work.

DEALERS REGARDED AS SALESMEN By C. W. Esmond

The sale of ice cream is only completed when the consumer has eaten it with pleasure and satisfaction, is the way the sales manager of a large Canadian creamery regards the sale of his product.

In his analysis of the sales problem he regards each of his dealers as a part of his organization, as his salesmen and not as customer. His men who work with the dealers are not salesmen but sales-managers or sales-builders.

It is only an incidental part of their work to write down the dealer's requirements of so many gallons of iee cream, so many cones, etc. Their real work is to help the dealer to handle the maximum amount of iee cream with profit to himself and to the manufacturer. Their real work is to develop the sales efficiency of the dealers in their territory.

With this end in view they go belind the fountains and demonstrate the making of new dishes; they wait on customers; they explain about and sell bricks to people who don't know about them; they may call up private homes on the telephone and tell them about specials; they tactfully show how neatness and cleanliness draw trade; show how to prevent waste and loss at the fountain; show the dealer how to display and advertise his goods; show him how to keep records and know for a certainty what lines are yielding the best returns.

Their advertising is almost entirely done through the dealers. Every move that is made toward the consumer has for its object the encouragement, education and stimulation of the dealer as well as the education of the consumer.

They maintain that this plan not only develope dealers who merchandise their ice cream more augressively but that it also builds the kind of service at stores and fountains that makes the consumer a steady consomer once he or she has been reached and influenced to try their ice cream. Their sales structure builds surely as well as rapidly

ICE CREAM AS AN EQUALIZER OF THE DAIRY INDUSTRY

The Ultimate Object to be Obtained in Building a Permanent Ice Cream Business Is Increasing Consumption Without Disturbing the Equilibrium of the Industry

> By Dr. C. L. Roadhouse Professor of Dairy Industry, University of California From an address delivered at the annual convention of the Pacific Ice Cream Manufacturers Association

is, as I see it, the means of using up some of that surplus material that comes along in the spring of the year, when the pastures are green, and this may be done in different ways, which are, I believe, very familiar to all ice cream manufacturers.

The ultimate object to be obtained in building a permanent ice cream business, without disturbing the equilibrium of the business in a given territory, is to be accomplished by increasing consumption. The per capita consumption of ice cream in the United States, at this time, is greater than in any other country, which points to greater possibilities in this direction than there would be in a country like New Zealand, where ice cream has not become generally used.

The consumption of ice cream in this country has been considerably stimulated during the past few years to the extent that it is probably growing faster than any other branch of the dairy industry. The figures published by the U. S. Bureau of Markets indicate the tendency in this direction. For the Western states, in which we are most interested. the figures for 1918 and 1919 are given as follows: ANNUAL PRODUCTION OF ICE CREAM IN CERTAIN WESTERN STATES FOR YEARS 1918 AND 1919.

State.	Production for 1918. (Gallons)	Production for 1919. (Gallons)	Increase Or Decrease
Idahe	. 354,224 . 1,052,110	246,415 517,117 1,130,305 1,577,649	+27.31 +45.99 + 7.43 — 0.55
Washington Wyoming California Colorado	. 93,276 . 2,976,089	117,978 3,297,305 1,197,270	+26.48 +10.75 +28.07
Nevada	. 53,513 . 371,148 . 224,781	70,089 445,207 193,327 39,754	+30.99 +19.99 -13.99 -14.19
Grand total	7,886,388	8,832,426	+11.1.

It is noted that where the same icc cream manufacturers reported for both years, 1918 and 1919, there was 11.1 per cent, increase in output. It is believed that there has been a much greater increase since these figures were prepared,

The causes which lead to increased consumption are undoubtedly influenced by the palatability and the reliability and reputation of the product.

Undoubtedly the palatability of the product does more to influence the consumption of ice cream than any other item. The quality and proportions of the various constituents are determining factors in palatability. Since the ice cream manufacturer has complete control over these factors, every effort should be made to make them as near perfect as possible.

The food value of ice cream is well understood by the manufacturers who attend these conventions, and by those who have made a study of the

Ice cream as an equalizer of the dairy industry subject. A statement made by the manufacturer about his product, however, is not given as much credence as a statement made by a person not directly connected with the business. We make faster gains when we get others to boost our product for 115.

> Attractive advertising is an important item in increasing interest for our home trade, and I wish to congratulate this Association on the attractive cover of the program. But we can go further to stimulate general interest in the use of ice cream. Such agencies as well organized State Dairy Councils, which have representatives devoting full time to their work, can, through Women's Clubs, the school system and public meetings and conventions, accomplish far more for all branches of the dairy industry than can be accomplished by individual advertising. I believe the ice cream manufacturer should support both ideas; individual advertising to help his local business, and financial support given for general advertising that will help the business as a whole. Our problem is to acquaint more of the consumers with facts concerning the food value of ice cream. Is not the Dairy Council the best agency for accomplishing this?

> I have a university student living in my home. He is a thin, overgrown boy, nearly six feet tall. I learned that he did not use milk in any form, and, when inviting him to dinner, he did not use cream in his coffee nor on his dessert. I explained to him the value of milk and dairy products, and told him about the fat boy that ate a pint of ice cream every day. Without my knowledge of it, he began eating ice cream. I remarked to him one day that he was getting fat, and he then admitted he was cating a pint of ice cream every day, in addition to his regular meals. In four weeks he had gained ten pounds in weight.

> The manufacturer cannot overlook the importance of maintaining quality in the raw material used in order to maintain a high standard product. We know that most manufacturers realize the importance of this and use the best materials available.

> Reference may be made to the man who overlooks this and may permit his employees to use materials of poor quality. The greatest misfortune would be the use of low-grade butter in the manufacture of ice cream, perhaps during an emergency, and I anticipate that this would not often occur. Only best grade butter fat should be used, since high-acid cream causes early rancidity, particularly when made into butter, and rancid butter fat is believed to be partially responsible for digestive disturbance following the use of such product. If rancid butter-fat is consumed in considerable quan

tity it may be injurious. Theoretically, at least, it is unquestionably true that butter containing a large amount of butyric acid is an irritant to the intestinal tract and will cause nausea and other depressing symptoms.

A question of first importance to the manufacturers of dairy products is the checking of the manufacturing processes. There are few manufacturers of dairy products who check their product completely, and from our observations the ice cream manufacturers, as a whole, are no exception. The building of a permanent ice cream business requires that careful checking be carried out.

Do we check in our raw material, butter fat and our supplies, e.e., condensed milk, milk powder, sugar, etc., and keep a permanent record of the date of delivery? The butter fat in the ice cream is the most important of the items mentioned. We should record the total weight of cream received from each source of supply, and determine the butter fat test of each lot, as a basis for payment. Can you realize that some men are still buying cream by the gallon? We must know the total weight of cream received for the day, and the awerage test, if we are to check our manufacturing business in the correct way.

Knowing how much butter fat comes into the plant each day is not sufficient. The amount used in each mix should be determined, in order that the total fat received can all be accounted for in the finished product.

Let us compare the value of overrum with the value of composition, considering the butter fat alone. If by checking the yield from the freezer we are able to maintain a 10 per cent. higher average, the money value of this checking is shown in the following calculations: If we are manufacturing ice cream with 90 per cent. overrun, 100 gallons of mix will make 190 gallons of ice cream, which, at a price of \$1.40 per gallon, would sell for \$266.00. If our own overrun should be 100 per cent. 100 gallons of mix would make 200 gallons of ice cream, which, at \$1.40 per gallon would sell for \$260.00, or a gain of \$14.00 for the 10 per cent. additional over-run.

If we are preparing this 100 gallons of mix from cream containing 12 per cent, butter fat, it would require 108 pounds of fat. If we are not checking the composition and 14 per cent, cream should be used, the 100 gallons mix would contain 126 pounds, or 18 pounds more fat than with the 12 per cent. A value of 18 pounds of butter fat at 72 cents per pound is \$13.96. This calculation shows that the saving of 2 per cent. butter-fat in the mix is practically the same value as gaining 10 per cent. in the yield, and if by clocking the yield from the freezer we are able to maintain a 10 per cent. higher average, we might still be losing practically an equal value by falling to check the composition of the mix.

Many of our ice cream plants are checking the yield but fail to check closely the composition of each mix. The real overrun or factory overrun is the important one and the one that determines the profits at the end of the year. We know of several good-sired plants that have gone through the season's run without having a complete daily check, and they had not learned until the end of the year that they were failing to get the yield expected. Can we afford to operate our plants and not have this check upon every ice cream mix?

We have considered the importance of checking the butter fat, and this is the most important checking to be done. There are other items in the ice cream business that should be checked. Some of the manufacturers buy ice. Do they check it into the plant? Are the cakes of ice full weight, or has there been a shrinkage of 20 per cent.? In case of shrinkage, is the ice company not responsible for it? He is, and we should insist on either having full weight or a proportionately lower price.

Our daily inventory of supplies will make it possible for us to calculate the quantity of supplies used, so that we can draw a balance cach day, each week and each month, and by doing so we stimulate a greater interest among our employees in getting results. Good men prefer to work for a businesslike concern where they can learn and where their progress is measured. Can we afford to overlook this business principle?

Building up an ice cream business, then, depends not only upon developing a larger business by increasing consumption, but also upon following business methods. The joy in business is to know what we are accomplishing each day."

CHOCOLATE AND COCOA PRODUCTS

A preliminary statement of the general results of the 1919 census of manufactures with reference to the manufacture of chocolate and cocoa products has been issued by William M. Setuart, Director, Bureau of the Census, Department of Commerce. It consists of a detailed statement of the values of the various products manufactured, prepared under the direction of Eugene F. Hartley, Chief Statistician for Manufacturers.

Reports were received from 48 establishments engaged in the manufacture of chocolate and coroa products. The products for the year were valued at \$130,258,256. At the census of 1914 reports were exceived from 36 establishments with products valued at \$35,112,810. The value of the annual production has therefore increased \$103,545,486 or 287.1 per cent.

In 1919, 14 establishments were located in New York, 10 in Pennsylvania, 8 in New Jersey, 6 in Massachusetts, 4 in California, 2 in Ohio and 1 each in Wisconsin, Illinois, Vermont and Connecticut.

MILK DEALERS' CONVENTION

The fourteenth annual convention of the International Milk Dealers' Association will be held at Hotel St. Paul, St. Paul, Minnesota, on October 13, 14 and 15, during the week of the National Dairy Show— R. E. Litzu, Secretary.

ELECTRIC DRIVE FOR ICE MAKING PLANTS Development of Raw Water Ice Systems With Its Simplified

Equipment Caused Phenomenal Growth of Electric Driven Plants

By William J. Bray

Sales Engineer, General Electric Co.. Chicago, III.
From an address delivered at the Annual Convention of
National Association of Practical Refrigerating Engineers

Electric drive for small refrigerating equipment has been in use for a great many years and for is manufacturing in isolated cases; however, the adaptation of electric drive to ice plants received its impetus from the development and perfecting of raw water ice manufacture. In order to fully apprecite the rapid progress that has been made during the past ten years in electrically driven ice making equipment, it is necessary to have an understanding of the conditions which preceded its use.

Prior to the year 1909 electrical applications were limited to refrigerating equipments installed in restaurants hotels, meat markets and dairies. The ice making industry had its steam driven equipment making distilled water ice using practically all of the exhaust steam in the manufacture of the product. Under these conditions, to bring about the change from steam drive to electric drive appeared almost an impossible task; however, in the developments of raw water ice manufacture, and its attending simplified equipment, we find the real cause for the phenomenal growth of electrical drive in this branch of the industry. Coincident with this development the central stations realized the fact that ice plant installations were very desirable load since the peak load in ice manufacturing came at a time when the demand from other requirements was at its lowest.

Prospective owners were no longer compelled to locate adjacent to railroads to obtain their coal supply at the lowest cost, nor relegated to purely industrial locations on account of the objectionable features of smoke, dirt, and noise. With electrical drive they were at liberty to locate at the point most economical for distribution and the plant could be designed to fit in architecturally with the surroundings. Since the electrically driven ice plant was not attended by dirt and noise there was no longer serious objection on the part of adjoining property

Machinery manufacturers were also ready to take advantage of electric drive due to the very much lower first cost and lower operating cost which make it much easier to interest their clients.

In the early stages of electric drive in ice making and refriereating plants no difficulty would have been experienced in compiling data on the number, size, capacity and performance even of all electrically operated machines or plants in any part of the country. Today, however, such general information would be very difficult to obtain because the number of electrically operated installations has increased so enormously during the past three or four years as to make it practically impossible for anyone to keep in close touch with such developments.

The exigencies of the late war are no doubt somewhat responsible for the urgent need for greater

economies. True, the economic possibilities of the electrically operated plant existed before the war, but during the war the distilled water ice manufacturer was confronted with these problems: Shortage of labor, shortage of fuel, and the fact that his product —presumably far superior in his judgment to raw water ice and costing considerably more to manufacture—received no more consideration by the public than raw water ice.

Now with manufacturing costs ascending and plant troubles increasing, he was compelled to do what he had consistently refused to do; that is, make a thorough and comprehensive study and comparison between his existing plant and its operation as against one electrically driven. I think we are all well ware of the results obtained, as we read of plants being changed from steam drive to electric drive from coast to coast and from Canada to the Gull.

I will present the following figures so that you may gain an idea as to what has been accomplished in and about Chicago in installing electric drive in ice making and refrigerating plants in the past eight years.

ICE AND REFRIGERATING PLANTS.

Tonnage Total Annual Kw. Kw.
Year No. Plants Prod. Connected Hp. Hrs. Cons. Per Total

Year	No. Plants	Prod.	Connected III	. Hrs. Cons.	Per Ton
1913	8	157,567	3555	8,646,948	55.5
1914	14	240,593	6963	12,121,487	59 2
1915	18	297,600	7504	15,466,912	51.2
1916	20	418,523	8941	20,423,227	49 9
1917	25	398,872	10850	21,830,219	46
1918	32	637,249	1,1431	31,243,497	45 2
1919	41	1.056,093	18215	51,748,653	48
1920	58		30974		

Note: Average kw. consumption per Ion of ice varies slightly due to refrigeration and ice cream loads which have not been segregated in compiling this table.

The average of a number of good plants in the Chicago territory, shows a power consumption of 43 kw. Ir. per ton of ice. To give you a further idea as to the relative kw. hr. consumption per ton of ice manufactured, I will present data for comparison between two plants of about the same capacity. Both of these plants use the simple drop pipe system and are near enough in size and output to present a good comparison.

	Plant	No. 1		Kw.	Plant No. 2			Kw.
Mo.	Kw. Hr.	Max. Kw.	Tons Ice	Hr. Per Ton	Kw. Hr.	Max. Kw.	Tons Ice	Per Ton
Ian.	840				5.3			
Feb.	15.000	175	7.0		20,094	1.29	600	33
Mch.	113,520	218	2397	47	86.149	188	2168	27
April	137,760	218	1019	45	110,472		3600	31
May	146,640	221	3051	48	113,197		3400	33
lune	113,600	259	2690		157.443	255	3744	42
Tuly	181.120	27.2	1029	60	169,597	258	3952	43
Aug.	187.360	275	3007	62	160,291	255	3996	40
Sept.	188,960	282	2869	66	168,528	257	3868	43
Oct.	136,000	281	2730	57	110.453	255	3028	36
Nov.	81,840	218	1350		23,914	75	988	24
Dec.	2,400	38	108		108			

Total 1,327,040 282 24340 57.1 1,102,299 258 29344 35.2 In the early days of electric drive, where alternating current was obtainable, squirrel cage motors were used for the small units 24 hp, and under, in moderate size cities. The size would probably be reduced to 7½ hp, or 5 hp, for installations in smaller towns where the capacity of generating units operated during the day was limited. The larger units from 35 hp, and upwards were of slipring construction with drum controller and external resistance.

Many of the owners and operators of the electrically driven ice plants had so many years' experience operating steam-driven plants that they still demanded the variable speed feature for running the equipment at low speeds, to pump out the system and to operate at reduced capacity in the winter season or for refrigerating the storage.

It was soon realized that the loss due to dissipating the energy in a resistor was an important factor in the total kw. hr. consumption per ton of ice manulactured. Other means were then devised so as to operate as economically as possible on reduced output. Where units of like capacity were in use, different sized pulleys were used and the owner was then losing only by the difference in efficiency of the motor when operating at reduced load.

Following are efficiency and power factor figures of 150 h.p. and 200 h.p. slipring induction motors operating at 575 and 425 rpm.

EFFICIENCY									
Hp.	Speed	1% Load	Full Load	34 Load	1/2 Loa				
150	575	89	90	89	88				
150	425	89	90	89	88				
200	575	91.5	91.5	91	89.5				
200	425	90	91	91	89				
		Pov	VER FACTOR						
		89	88	84	76				
		85	82	76	65 76				
		89	88	84	76				
		84	82	76	64				

You will readily observe that the central station was being penalized when operating at reduced loads. In cases where it was desirable to make a small increase in the capacity of the plant a small unit was installed to take care of the small increase of output or furnish the necessary refrigeration for the storage.

Soon after the outbreak of the war in 1917, when enormous demands were made on central stations for energy, it was realized that the application of synchronous motors to certain loads was desirable. Central stations land advocated a ruling from the Utilities Commissions for a penalty for plants operating below a certain power factor, which the Commissions should establish, and a corresponding homus for plants operating above the established value. The prospective builders of ice plants, therefore, with recommendations of consulting engineers readily appreciated the value of adopting synchronous mooth drive.

During the 1919 season in the Chicago territory, there were installed 1200 to 1500 hp. in synchronous motors, most of which I believe were belted to slow or moderate speed compressors. In the new ice making and refrigerating plants, between 800 h.p. and 10,000 h.p. synchronous motors have been installed, ranging in size from 85 hp. and 600 Rpm. to 700 hp. and 80 Rpm. There seemed to be considerable difference of opinion among manufacturers and consulting engineers as to whether a synchronous motor belted to the moderate or slow speed compressor was more

desirable than a motor direct connected to the socalled high speed compressor. While there had been few installations made in the past four or five years of direct connected synchronous motor compressor outfits, the majority of the synchronous motors installed in Chicago territory prior to 1920 were of the belted type. I think this is due possibly to some of the installation having been converted from steam drive to electric drive, and the cost of the synchronous motors for direct connection to these slow speed compressors would make their use prohibitive. While the tendency of manufacturers of refrigerating machinery for the past three or four years has been to develop higher speed compressors, due to the perfecting of the high speed plate type valve, this condition was apparently not taken advantage of until the present year. Of the 17 plants which have been completed, or are still under construction, 10 have installed direct connected synchronous motor units. The advantages are obvious, saving in floor space, elimination of belt troubles, and higher operating efficiency. A year or so hence it will be possible to give some very interesting figures on the operations of these direct connected synchronous motor-operated plants, but at this time practically no data are available since only one or two of these have only recently gone into operation and reports of results are not as yet available.

While reviewing various papers presented on this and kindred subjects during the past three or four years, I have noted statements that the synchronous motor has an operating efficiency of 95 or 96 per cent. It is the writer's experience that synchronous motors of about 150 or 200 hp, have an operating efficiency of approximately 91 per cent. at 141 load and 88 per cent. at ½ load, while synchronous motors of 600 to 800 hp, have an efficiency of approximately 94 per cent. at 141 load and 92.5 per cent. at half load. These values will vary somewhat depending on the speed of the motor.

I do not wish you to gain the impression that the slipring motor has ben discarded. This type of motor is still desirable for units requiring 100 hp. or less, since the ratio of cost of the synchronous type to the slipring type motor is considerably greater in the smaller sizes.

In line with the present day movement to reduce accidents in plants, by the installation of all classes of safety-first devices, it has become general practice to install slipring motors with the controllers and oil circuit breakers so arranged that these are interlocked, making it impossible for the operator to start the equipment without first bringing the controller to the off position, thereby cutting in all of the starting re-

It has been general practice to use exciters betheriven from pulleys on the main shaft of the compressors. There is no serious objection to this except that it involves a belt. However, from the standpoint of appearance, it detracts from the symmetry of the installation. This is especially so with the vertical type compressor installation. In most of the installations which I have mentioned, the synchronous motors either have direct connected exciters on the

main shafts or are excited from a common source by means of motor generator sets.

It is general practice to have a switchboard consisting of a main or service panel, starting panels equal in number to the synchronous motors installed. and as many feeder panels as necessary to take care of the distribution for auxiliary equipment and lighting. The equipment on the service panels varies on account of the requirements of different power companies and the amount which the owner or chief engineer desires to spend for equipment. Synchronous motor panels are pretty well standardized. If cach motor has its individual exciter, the panel should have an AC line ammeter, DC field ammeter, and DC voltmeter, rheostat mechanism, field switch with discharge slips, starting and running oil circuit breakers, with overload and under voltage protection, and the necessary current transformers.

In my opinion, disconnect switches should also be installed so that in the event that any work on the switching equipment becomes necessary, the entire panel can cut off from the main fuses. The chief engineer of one of these installations recently expressed himself as having been compensated for the

additional expense of the disconnect switches, during the time of starting up this new installation, as it made it possible to adjust the oil breakers without interrupting the service in the rest of the plant.

With high pressure installations, we have motor driven air compressors. With low pressure installations, we have motor driven positive pressure blowers, motor-driven pumps, agitators, core suckers and hoists. Motors of 7½ h.p. and larger should be equipped with compensators having overload and under-voltage protection, and a separate disconnect switch.

There are also installations where automatic motor starting compensators may be used.

All motors of 5 h.p. and over should be equipped with suitable oil circuit breakers having overload and under-voltage protection. Small automatic starting devices for these motors are also available.

While not purely an electrical device, the flow meter has been used to some advantage in refrigerating plants where refrigeration has been sold to customers in adjacent buildings. I am informed that this device has given very satisfactory service in measuring the refrigeration for these customers.

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ICE CREAM COURSES AT PENN STATE COLLEGE

Increased Attention Shown In These Courses Because of the Great Demand for Trained Men

By W. B. Combs

Aus't Professor of Dairy Manufacturing, Pennsylvania State College

The courses on ice cream making at the Pennsylvania State College are receiving increased attention, not only because Pennsylvania is the leading ice cream state of the Union, but also because of the great demand for men trained in the theory and practice of ice cream making.

The courses devoted to ice cream making are only a part of the general dairy manufacturing courses. No dairy manufacturing subjects are given the student until he has received ample elementary work in milk and cream testing, chemistry and bacteriology. If the student has followed the advice of his instructors he will have had many other subjects during his first two years in college which he will later see have a direct relation to his study of dairy manufactures. He is not allowed to enter classes in dairy manufactures proper until his junior year.

At present there are three divisions of the course in ice cream making, namely, the elementary, the advanced work and research problems in ice cream manufacture.

The elementary course consists of 18 lectures and 36 laboratory periods given to all the students in dairying. The lectures take up the classification of ice cream and ices, factors influencing the development of the ice cream business, its history, equipment used, together with the principles used in the care of the mix and in freezing the batch. The laboratory work is designed to give the student

practice in calculating formulas, testung, standardizing the fat and solids not fat, judging extracts and binders, manipulation of the viscolizer and handling the freezer, together with the manufacture of the classes of ice cream discussed in the lectures to enable the men to become acquainted with real factory problems. Such work as making bricks, fancy molds, tinting and decorating are also given in this course.

The advanced work goes still further into the subject. Demonstrations are made showing the methods used in caring for the ice cream mix, the many uses of the emulsifier and viscolizer, means of saving time in the aging of the mix and the freezing of ice cream; also a thorough study is made of ice cream improvers and various grades and kinds of condensed milk and milk powders on the market. Throughout this work the student becomes better acquainted with the freezer, the viscolizer, emulsifier, the Mojonnier tester and other minor equipment which he will be called upon to use in the factory. Plans are now under way to install a condensing pan, the operation of which will also be given in this course, as the two subjects are becoming closely related.

The research work is given after the student has had opportunity to take the elementary course and has had at least three months' experience in an ice cream plant. In this course the student is given opportunity to pursue any problem of his liking under the guidance of his instructor or he may be called upon to work with the instructor upon some phase of his research problems dealing with ice cream manufacture.

The equipment at present consists of one tub freezer, one 20-quart brine freezer, one 40-quart brine freezer, an ice crusher, one viscolizer, two emulsifiers, one refrigerating machine, one Ruff evaporator, one Mojonnier tester, and incidental equipment which is naturally required in carrying out the work.

COST OF MILK PRODUCTION

In winter the cost of feed, bedding, and pasture amounts to 39 per cent. of the yearly cost of producing milk in a typical Vermont dairy section, while in summer it amounts to 15.9 per cent. specialists of the United States Department of Agriculture found as a result of a study covering two years in a section of that State where milk was produced for market. The report of this study is now published in Department Bulletin 923, Unit Requirements for Producing Milk in Vermont. While the figures obtained show the requirements of producing milk in that particular section, and may be approximate of the requirements in similar sections, the specialists point out that they do not apply to dairy sections where other conditions and methods of management prevail.

It was found that 31.1 pounds of concentrates were required to produce 100 pounds of milk in winter, while to produce the same amount in summer only 8.7 pounds were necessary. Other requirements for producing this amount of milk in winter were: Hauling and grinding concentrates, 2 cents; dry roughage, 12.9 pounds; silage and other succulent roughage, 191.3 pounds; bedding, 11.2 pounds; man labor, 2.7 hours; horse labor, 0.6 hour; other costs, 55.5 cents.

In summer the unit requirements for producing 100 pounds of milk other than econentrates were: Hauling and grinding concentrates, 0.5 of a cent; dry roughage, 187 pounds; silage and other succulent roughage, 278 pounds; pasture, 0.1 of an aere; man lahor, 2 hours; horse lahor, 0.4 hour; other costs, 425 eents.

In one year it was found that 1,030 pounds of concentrates were required to keep a eow. Other requirements were: Hauling and grinding concentrates, 61 cents; dry roughage, 3,600 pounds; silage and other succulent roughage, 5,007 pounds; hedding, 263 pounds; pasture, 3 acres; man labor, 123 hours; borse labor, 241 hours; other costs, covering interest, taxes, and similar items on the dairy's share of buildings and equipment, but not including management, \$25,36. It was determined that the dairy's share of the total investment in buildings, equipment, and herd amounted annually to 11.5 per cent, of the total investory value.

Copies of this bulletin may be obtained from the Division of Publications, United States Department of Agriculture, Washington, D. C.

HEALTH OF OFFICE FORCE

The office force is just as important as the factory force. In order to keep the office force working as effectively as the rest of the plant, good health is required, but when advice is given as to keeping in good health, it e suggestions to be made are somewhat different. The Pennsylvania Department of Labor and Industry has the following to say to the office force of a factory:

Your eyes are necessary for your work. Are you using them right?

Insufficient light strains the eyes. Natural light is the best light to work by, but good artificial light is better than boor daylight.

Too much light is just as harmful as too little light. Do not allow sunlight or strong artificial light to shine directly or be reflected into your eyes.

See that you have plenty of fresh air in your office. If ventilators are provided, have their operation; if they are not provided, a board two or three inches wide placed between the lower sash and the window frame will allow fresh air to enter between the upper and lower sashes but will prevent drafts.

Have your own personal drinking cup and allow no one else to use it. Colds, grippe, tonsilitis, scarlet fever and many other diseases have been spread by means of the common drinking cup.

Never put your lead pencil in your mouth. Someone else may have used it in the same way.

Office work does not actively employ your muscles. Take regular exercises in the open air; walk to and from your work, if possible.

Headaches may be caused by poor ventilation, had lighting, indigestion, lack of exercise, or insufficient rest. Remedy these defects and if headaches continue consult your physician, for they may mean serious trouble for you if left untreated.

ICE CREAM CURES TARDINESS

Ice cream used as a nutrition test has been responsible for a 100 per cent. attendance in the second grade at the Columbia street school in Cumberland, Md., where 43 pupilş are getting six ounces of vanilla ice cream every day at 3 o'clock donated by a local factory.

The test covers nine weeks. The children were weighed when they began and are being weighed weekly during the test. This follows a milk test recently made in the schools.

Later a test with cheese and other dairy products will be made. The eating tests seems to have been a cure for tardiness and truancy.

TEXAS DIRECTORS MEET

At a meeting of the directors of the Texas Ice Cream Manufacturers' Association at Waco. May J, a resolution was unanimously adopted favoring the repeal of the war tax on ice cream, now paid by the consumer.

Plans for the annual meeting of the association, to be held this year at Fort Worth early in December, were discussed, and the exact date for the meeting will be determined by the Fort Worth members of the state association. Past President H. T. Pangburn of Fort Worth presided at the meeting.

THE ICE CREAM TRADE JOURNAL

A practical halper for Ice Cream Manufacturers and a chronicle of trade evants.

> Published Monthly by THOMAS D. CUTLER 171 Madison Avenue, Naw York

Enterad as second-class matter April 11, 1907, at the post office at New York, N. Y., under the Act of March 3, 1879.

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The Business
Situation
Situation
Gream circles throughout the country at the present time, there seems to be no rational explanation—unless it is a rational explanation to say that the prevailing state of mind has been brought about by dwelling too much on the fallacious thought that the readjustment of industry and business in general necessarily means bad times for all.

As a matter of fact, the true present condition of industry and business is not disclosed by such surface indications as the state of the money market. the downward trend of industrial securities, the passing of dividends by big corporations engaged in lines commonly regarded as barometrical and the strikes and strike-talk due to wage reductions. We must look deeper to see the orderly progress of readjustment and to find the healthy undertone which is truly indicative and most encouraging. A passed dividend, for example, does not necessarily mean that earnings have fallen off materially; it may, and just now more often than not, does mean that temporarily it is better business to retain earnings as additional working capital than to borrow at current rates. And the need for additional working capital is a fairly common need, in part to finance increasing production, with production costs still somewhat above normal, and in part to cover the enlargement of credits made necessary by existing abnormalities in the world's money markets.

As for the labor situation, who can doubt that it is improving steadily? In spite of strikes and strike-talk, the evidence accumulates that labor is accepting the inevitable with increasing grace. Unemployment, too, is a diminishing problem, and indications are not lacking that a minor redistribution of some classes of labor would result in the employment of practically all save the chronic loafers who infest the earth seemingly to give philanthrophy something to feed on perpetually.

Even if the underlying conditions of industry and business were less favorable, if seemingly unfavorable surface indications in fact reflected the true situation, it would still be difficult in the light of past experience to understand why any ice cream manufacturer should lack confidence, feed his soul with essence of pessimism and have visions of bad Jusiness resulting from conditions that never have affected the ice cream business seriously.

The bogies of today had substance a year ago, even six months ago; but the ice cream industry flourished while most other industries made headway lust slowly under the terrific handicaps of the past year. The truth is that the ice cream business is one of the few businesses not seriously affected by unfavorable conditions which affect business and industry in general. This was clearly shown by data gathered last fall, when general conditions were admittedly bad, by one of the big New York advertising agencies. The businesses least affected, if at all, were those providing our pleasures and luxuries, notably sporting goods, theaters, jewelry, ice cream and candy. Most other lines were shown to be hard hit and even at that time in a doubtful position.

So with general conditions vastly improved and improving, there is every reason for confidence and optimism in the ice cream industry, and no reason at all for doubts and fears.

CONVENTION DATES

The National Association of Ice Cream Manufacturers, October 10, 11 and 12, at the Hotel Radisson, Minneapolis, Minn.

The National Dairy Show, October 8 to 15, in the Exhibition Building, Minnesota Fair Grounds, between St. Paul and Minneapolis.

The Eastern Exhibition of The Association of Ice Cream Supply Men, October 31 to November 5 inclusive, in the Elmwood Music Hall, Buffalo, N. Y.

OUERIES REPLIES COMMENTS

Packing Ice Cream

What is considered the best method of packing tubs for express some properties of the packing tubs for express, some packing tubs for express, some packing tubs for express, some packing tubs for expression of see earlier and salt would keep soil of two gallers of see earlier and see earlier in our own plant and will appreciate any information you have

The subject of packing ice cream for express shipment has come up for discussion at various times at national and state conventions, but so far as we can recall no definite conclusions were ever reached, and opinion today is as much divided as it was years ago, except that the advantage of covering the ice pack in one way or another is quite generally recognized, and that there is a general tendency toward lighter salting.

As a matter of fact the problem is individual rather than general, because of the many and varying conditions affecting it-even though it may be true that some general principles apply in all cases.

Time, rather than distance, is the factor to be dealt with in working toward a solution of the packing problem, for it is not infrequently the case that delivery is quicker at a 250-mile point than at another less than half as far away, and prevailing temperatures vary in different sections.

Variation in practice is frequently found at a given plant; that is, hard ice cream may be shipped one day and comparatively soft ice cream the next, if a rush is to be met. In the latter case, where supposedly hardening is to be effected in transit, the refrigeration requirement is greater and the method of packing should be varied accordingly, especially as regards the proportion of salt, and obviously the allowance of ice too should be increased if possible.

Ordinarily in shipping hardened ice cream advantage is, or should be, taken of the reserve refrigeration in the ice cream itself, and this reserve depends not only upon the initial temperature of the ice cream packed but also in part upon the weight of water in the ice cream. The importance of this reserve refrigeration becomes apparent when you consider that five gallons of ice cream will hold in good condition in an insulated iceless packer from twelve to twenty-four hours, depending in part on the character of the ice cream but chiefly on the prevailing outside temperature.

Mixing ice and salt before use, as in a box or on the floor, always entails loss. Perhaps this loss is not important enough to offset the convenience of the practice, but it is a loss nevertheless that should not be left out of the reckoning.

When the tub is partly filled from the bottom with plain ice with the ice and salt pack at the top, the unsalted ice acts virtually only as a space filler. Excelsior or any other similar filler would be nearly as efficient up to the time when meltage allows undissolved salt to come into contact with the filler ice-and then the top (the danger point) is more or less exposed in any case.

It has been found by actual experiments that less than half the quantity of ice and salt commonly used affords ample protection for short hauls, or short-time storage, when the pack is supported in the upper third of the tub on a wood collar. This would seem to indicate that for economy of ice and salt with equal protective efficiency the shipping tub should be so designed as to carry far the larger part of the pack towards the top and as much as possible of it over the top of the can.

From the foregoing it becomes clear that we can give no definite answer to your inquiry as to the amount of ice and salt required to keep ice cream solid when carried in an open wagon. It depends upon the character and initial temperature of the ice cream, the placement of the ice pack and the further protection afforded, as by covers for tubs or box and whether the sides of the box are insulated or not, and of course upon the air temperature and the time length of the

For your locality and your ice cream (in other words, for the conditions you have to meet) your study and experiments will give you a far better line on your minimum ice and salt requirements, for long and short hauls, than any theoretical estimate or even the actual experience of others who may have had very different conditions to meet.

Increasing The Overrun

Will you please advise me concerning the use of fine salt in the brine box for lowering the temperature of the freezing brine? We are using Retsof salt in lumps about the size of peas.

It seems to me that fine salt would melt the ice faster

the size of pean.

It seems to me that fine sall would melt the jee faster which would result in a lower brine temperature. I am now getting about 10 deg. F. and would like to get down to 0 deg. to hasten the freezing time which is now about monia brine system with a temperature of 5 deg. to 8 deg. below zero at the freezer and froze a batch in ten to the strength of the strength

below zero at the freezer and froze a macn in sen to the series of the series and the series are series and the series are series and the series are series and the series and the series are serie

While it would be possible to lower your freezing temperature by using fine salt rather than salt the size of peas, nevertheless it would be an impractical wasteful method. If you wish to cut down the brine temperature you can do so by in-

creasing the proportion of coarse salt and increasing the flow of brine.

No doubt you realize that lowering the brine temperature besides decreasing the length of time of freezing will also lower the yield. However, the overrun can be maintained by increasing the speed of the freezer.

There is another factor relative to increasing overrun that is now being used in a great many plants with marked success. Granted that you decide to increase your overrun to 85 or 90 per cent., instead of increasing the speed of the freezer you might gain the desired results by the following method: When you have reached the end of the run shut off the brine and continue beating the batch until you have the desired swell, then open the brine valve slightly as you pull the batch to keep it from going beyond the desired overrun.

The question of more or less overrun in your product must be decided by yourself. We take it that to make a 14 per cent, ice cream you are standardizing the 40 per cent, cream with skim milk to 18 per cent, and then adding 91/2 pounds sugar to 5 gal. of the 18 per cent. cream to which mixture you add your gelatine and ripener. If this is true we figure you have 38.8 per cent. total solids in your product, namely, 14.4 per cent, fat, 6.2 per cent. s.n.f., 18 per cent. sugar and 0.2 The above solid content per cent. gelatine. should make a good piece of goods. The question for you to decide is-will you be so well pleased with your ice cream with a higher overrun?

Two Formulas Using Sweetened Condensed Milk

We would appreciate it very much if you would give us the necessary information on the following see cream mix;
We are using 40 per cent, cream, sweetened condensed
milk containing 8 per cent. butter fat, 45 per cent. sugar,
and fresh milk testing 3.5 per cent, butter fat,
We would like a formula for making an 8 per cent. ice
cream mix. If possible we would like this information immediately we are having trouble in getting a good mix at a reasonable cost.

The following formula is computed figuring the batch requirements as though the condensed milk was unsweetened then replacing the sugar in the sweetened condensed milk by water to complete the mix. The complete formula for 100 lbs. follows:

11,00 lbs. Cream, 40% fat and 5.6% s.n.f. 40,50 lbs. Milk, 3.5% fat and 9% s.n.f. 28.50 lbs. Sw. Cond. Milk, 8% fat and 20% s.n.f. and 45% sugar (approximately 13 lbs.) 28.50 lbs. Sw. Cond. Milk, sugar (approxim 2.00 lbs. Sugar 13.00 lbs. Water .50 lbs. Vanilla 4.50 lbs. Gelatine Solution

100,00 lbs. Complete Mix

The fat content of the above formula is 8.1 per cent.; milk solids not fat is 10.06 per cent.; sugar is 15 per cent.; gelatine (solid) .5 per cent. (figuring 1 to 8 gelatine solution), thus giving a total solids content of 33.66 per cent.

The following formula is computed, figuring sugar and milk portion combination together and solving for four unknown quantities. The complete formula for 100 lbs. follows:

11 lbs. Crams 40% fat and 5.5% s.n.f.
58 lbs. Mis, 3.5% fat and 9% s.n.f.
20 lbs. Sw. Cond. Milk, 8% fat and 20% s.n.f. and 45%
6 lbs. 3gar (9 lbs.)
4.5 lbs. Gretaine Solution
5 lbs. Cretaine Solution
5 lbs. Value

100.0 lbs. Complete Mix

The fat content of the above formula is 8.03 per cent.; milk solids not fat is 9.84 per cent.; sugar is 15 per cent.; gelatine (solid) is .5 per cent., thus giving a total solids content of 33.37 per cent.

Tank for Hardening Ice Cream

We are operating a small plant making occurrent to supply the control of the cont

The maximum temperature at which you can successfully harden your ice cream in a brine tank is around 8 deg. F., while a better temperature for this tank would be from 0 to 3 deg. F. Attempting to harden ice cream in a tank with a brine circulation at 15 to 18 deg. would result in a mushy, icy product.

If you cannot get your brine down to 8 deg. or below and are not in a position to put in a hardening room you had best harden your ice cream by the ice and salt method, using an insulated box or cabinet for this purpose. There are numerous ways to construct such a box but it should be of substantial material and preferably steel lined and properly insulated. The box should be built deep enough to allow the cans to be placed close together with sufficient room in the box for ice and salt on top of the cans. The box should have a cover and the proper outlets for the spent brine. It is advisable to partition the box so that only part of it need be iced when the output is low.

Chocolate Syrup

Concerning cake chocolate, should I make a syrup of sugar and water and add the melted chocolate, or pour the syrup into the ehocolate, or put all three in at once and bring to a boil? What proportions should I use? Is there anything I can do to prevent the formation of butter particles in the freezer when using fresh reman? I am having some trouble that way.

The chocolate syrup can be made either by melting your cake chocolate first or by adding it direct to the syrup. The proportions generally used are ten pounds of sugar to one gallon of water together with the amount of chocolate according to the concentration desired.

The butter particles are formed in your freezer, when using fresh cream, no doubt because you are partly churning your cream by freezing at too high a temperature or running the dasher at too high a

NEWS OF ICE CREAM FACTORIES

Readers are requested to send for this department authentic news of intention to build, improve or add equipment to plants; changes in control, and other items of interest about plants and the business.

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Auburn—The dairy division of the Alabama Polytechnic Institute contemplate installing an ice cream department next fall.

Birmingham—The Mountain Grove Creamery Ice & Electric Co. has increased its capital stock from \$340,000 to \$500,000. The company is reported to be planning the erection of a new ice cream plant.

Sheffield—The Sidebottom Velvet Ice Cream Co. has installed a 12-ton vertical single-acting belt-driven enclosed York refrigerating machine and high pressure side complete.

ARKANSAS

Pine Bluff-The Velvet Ice Cream Co, has opened its new plant at 217 Walnut st.

Rogers—The Victor Creamery Co. was recently organized and an ice cream plant installed.

CALIFORNIA DI UNI I

Berkeley—The Placerville Ice Cream and Creamery Co. is reported to have established an ice cream plant here.

Chico-J. D. Stanford contemplates the erection of an ice cream plant here.

Marysville—The Ellamore Candy & Ice Cream Co. recently opened its new ice cream and candy plant

COLORADO

Denver—The Corbett Ice Cream Co. has added to its York refrigerating equipment one 30-ton vertical single-acting belt driven enclosed refrigerating machine and high pressure side complete.

CONNECTICUT

Forestville—The White Rock Ice Cream Co., J. W. Yale and Matthew Lamont, proprietors, has installed additional machinery, including two horizontal Miller Tyson Model C brine freezers, one 60-gal. Miller batch freezer and one Manning can washer.

Hartford—The Newton-Robertson Co. has added to the refrigerating equipment of its ice cream plant a 4-ton machine furnished by the Automatic Refrigerating Co.

Hartford—The CeBrook Ice Cream Co., which was recently organized, began operations May 25 in its new plant at 551-555 Windsor st.

Hartford—Frederick W. Arnold, president of the Trout Brook Ice Co., is reported to have remodeled the refrigerating plant of the Aetna Brewery into a modern ice cream plant.

etonina

Marianna—The West Florida Ice Cream and Dairy Co. has been organized with the following officers: President, F. D. Gouldín; vice-president. Alvan Langford, and secretary and treasurer, W. P. Sonderup.

IDAHO

Hailey—The Hailey Dairy Co. is reported to have opened an ice cream factory.

Montpelier-E. R. Clark is contemplating the installation of a small refrigerating outfit in his ice cream plant.

ILLINOIS

Belvidere—J. J. Dymond & R. L. Salley have purchased the ice cream plant of Hugh Partridge on W. Pleasant st. Mr. Sally writes that their plant is running full capacity and they will probably increase their equipment next season, giving an increased capacity of from 50 to 100 per cent. The new frm will be known as Dymond & Salley.

Breese—The Prairie View Creamery Co., ice cream manufacturers, has installed one 6-ton vertical singleacting belt driven enclosed York refrigerating machine and high pressure side complete.

Chicago—The Certified Ice Cream Co., 2215 Wabansia ave., recently increased its capital stock from \$30,000 to \$110,000.

La Salle-L. V. Orsinger has added three 60-qt. Miller freezers to the freezing equipment and doubled the hardening room capacity of his plant at 135 to 143 Joliet st.

Mount Carroll—F. H. Isenhart, ice cream manufacturer, is installing a 4-ton vertical enclosed type Frick machine will complete refrigerating equipment for use in his ice cream plant.

Oak Park—McBride Brothers & Knobbe, 508 N. Boulevard, has added to its refrigerating equipment one 15-ton vertical single-acting belt-driven York refrigerating machine and high pressure side complete.

Peoria—J. D. Roszell has added to the York refrigerating equipment in his ice cream plant at 102 Oak st., one 125-ton horizontal double-acting belt driven machine and condensing side.

Robinson—L. S. Heath & Sons has added to the refrigerating equipment of its plant a 9½-ton vertical single-acting belt driven enclosed York refrigerating machine and high pressure side complete.

Streator—The S. & S. Ice Cream Co. is reported to have consolidated with the B. & G. Ice Cream Co. The former company is owned by Messrs. Schurman and Schultz and the latter by Messrs Marshall and Lawrence.

INDIANA

Bremen—Schlosser Brothers recently installed in their combined creamery and ice cream plant a 10ton vertical single-acting belt driven enclosed York refrigerating machine and high pressure side complete.

Connersville—The Shady Corner Dairy Products Co. recently added an ice cream department to its plant. Besides installing new dairy equipment the company installed new ice cream and refrigerating equipment, including a 40-cpt. Cherry freezer, a 100gal. Cherry pasteurizer and mixer, viscolizer, 10ton Frick compressor and 6-ton ice tank

Hammond — The Consumers Ice Cream Co.. through an error, was reported in the May issue of THE ICE CREAM TRADE JOURNAL as being incorporated

in Hammond, Illinois, instead of Hammond, Indiana.

New Albany—The Purity Maid Products Co. recently installed in its dairy and ice cream plant a 15-ton vertical single-acting belt driven enclosed York refrigerating machine and high pressure side complete.

10WA

Lenox-The City Ice & Ice Cream Co., has installed a 10-ton ice plant.

KANSAS

Arkansas City—The Finney Ice Cream and Creamery Co. has installed new equipment, including a Model I Cherry freezer and a Davis pasteurizer.

KENTUCKY

Corbin—The Corbin Cream Co., 104 Third st., has been organized as a branch of the Jellico Cream Co., Jellico, Tenn., with the following officers: President, W. S. Harkness; vice-president and treasurer, D. A. Harkness; secretary and manager, C. E. Perkins, and assistant manager, W. S. Harkness, Jr. The company has equipped a plant with new machinery, including two Emery Thompson freezers and an 8-ton York refrigerating outfit. The pasteurized mix is shipped from the Jellico plant, but later complete pasteurization equipment will be put in at Corbin. The plant has a hardening room capacity of 1,500 gallons.

LOUISIANA

Baton Rouge—The Blue Ribbon Ice Cream Co. las been organized by A. N. and F. S. Herbert for the wholesale manufacture of ice cream. The company will operate in its present location until next fall, when a new plant is contemplated. H. B. Field is manager of the company.

Delhi-R. J. Rials and R. S. Ray have established a small ice cream plant here which will operate under the firm name of Rials and Ray.

MAINE

Eastport—E. C. Wilson, of Lubec, has purchased the L. C. Atwood ice cream and ginger pop factory. Waterville—The Purity Ice Cream Co. has been organized by A. Raymond Sanborn. The new company is building a new plant which it expects to

pany is building a new plant which it expects to have running about June 15. The capacity of the new plant will be approximately 1,000 gal, daily with provisions for growth.

MARVLAND

Baltimore—The Horn Ice Cream Co., 466 Aisquith st., recently let a contract to the Consolidated Engineering Co., 243 Calvert Bldg., to erect a 2-story brick addition to its plant and a one-story brick boiler-house.

Frederick—The Nicodemus Ice Cream Co. has just opened its new ice cream plant with all new equipment, including two 30-ton vertical, enclosed type Frick refrigerating machines with complete compression system and a 15-ton ice making system.

MASSACIIUSETTS

Brockton—The Liberty Ice Cream Co. is reported to have purchased the Brown and Burnham Building, which will be remodeled into a modern ice cream plant.

Ipswich—The Ipswich lee Cream Co. recently opened up a new ice cream plant here.

North Adams—The Country Maid Ice Cream Co. has been established by C. H. Mausert & Son, ice manufacturers. The new firm recently opened a plant with a daily capacity of 800 gallons.

Palmer-Louis W. Morris is reported to have entered the wholesale ice cream business.

MICHIGAN

Detroit—The Consumers Ice and Creamery Co., 1121 Book Bldg., has opened an ice cream plant with a daily capacity of 2,500 gal. of ice cream.

Watervliet—F. F. Smith & Son have installed in its ice cream plant a 15-ton vertical single-acting belt driven enclosed York refrigerating machine and high side complete.

MINNESOTA

Austin—The Austin Sanitary Milk Co., 107 Courtland ave., recently installed new equipment in its ice cream plant, including an 8-ton York ice machine, viscolizer, batch mixer and tubular cooler. The company recently purchased the building adjacent to its plant.

MISSOURI

Kansas City—The Franklin Ice Cream Co., 1213 Harrison st., recently installed a 50-ton vertical single acting high speed enclosed York refrigerating machine direct connected to motor and condensing side, also other refrigerating equipment.

Kansas City—The Peerless Ice Cream Co., a recently organized company, recently purchased a site for a plant at the southwest corner of Thirty-first and Oak sts.

Sedalia—The Weber Ice Cream Co., with plants at Moberly and Jefferson City, Mo., has purchased the Coontz Ice Cream Co. here. The Sedalia plant will be improved and equipped with modern machinery, giving it a capacity of 1,000 gal. per day

St. Louis—A. F. Woll has bought Herman Horowitz's interests in the National Ice Cream Co., 4268 North Market st. The company recently installed a new 30-ton vertical enclosed type Frick refrigerating machine and increased its hardening room capacity 5,000 callons.

St. Louis—The Henry E. Grafeman Milk Co., 1700 N. Vandeventer ave., recently let a contract to H. O. Hirsch & Co., Wainwright Bidg., to construct a one-story and basement, 50 by 32 ft., ice cream factory building.

NERBASEA

Fremont—The Real Ice Cream Co, is installing an ice plant that will have a capacity of from 12 to 14 tons per day.

NEW HAMPSHIRE

Manchester—The Coon Ice Cream Co. has added to its refrigerating equipment a 20-ton C. P. compressor.

NEW JERSEY

Newark—The Puritan Ice Cream Co., 596 Market st., recently installed a new brine cooler system, including a 100-ton multi-pass shell and tube brine cooler, furnished by the Frick Co.

NEW YORK

New York-Loft, Inc., 400 Broome st., candy manufacturers, is adding an ice cream manufacturing department to its organization. According to E. B. Underhill, president of the company, its new two and one-half million dollar candy factory is practically completed and in connection with this the company is installing the power plant needed to take care of the new ice cream manufacturing plant.

Troy-The Albany Ice Cream Co. has installed a 6-ton York refrigerating machine.

Utica-The Superior Ice Cream Co. has been organized by Ignazio Palmano, 1031 Albany st.

оню

Athens-The Athens Ice Cream Co. has installed a 4-ton York refrigerating machine.

Dayton—The Gem City Ice Cream Co., 1005 W. 3d st., recently completed the installation of a 20-ton vertical enclosed type Frick machine and complete refrigerating equipment.

Elyria—The Richwine Ice Cream Co., 428 E. Broad st., recently installed one 10-ton vertical single-acting belt driven enclosed refrigerating machine and high pressure side complete.

Irontown—The Ironton Ice Cream & Dairy Co. has been incorporated with a capital stock of \$25,000 by N. A. Sheridan, D. T. Bush, D. Morgan and others. Lancaster—Moores & Ross Milk Co., 170 N., 94 st., Columbus, Ohio, has purchased the Hamilton Ice Cream Co., which will be run as the Lancaster branch of the Columbus company.

Logan—The Logan Ice Cream Co. is building a two-story ice cream plant which it hopes to have completed by July 1. The company recently took over the Crystal Springs Ice Plant Co.

Mansfield—The Telling-Belle Vernon Co., of Cleveland, Ohio, has established a branch plant here.

Norwalk—The Puritan Creamery Co. has added an ice cream manufacturing department to its organization.

Toledo—The Citizens Ice Co. recently started manufacturing ice cream in connection with its ice business.

OKLAHOMA.

Hobart—The Hobart Ice & Bottling Co. has enlarged its ice cream department increasing its hardening room capacity and installing a new 10-ton York refrigerating outfit.

Lawton—The Lawton Ice Cream Co. has been purchased by Mrs. C. E. Bear from L. K. Jones. Sapupla—The Sapupla Ice Cream Co. has been purchased by L. K. Jones formerly of Lawton.

OREGON.

Salem—The Buttercup Ice Cream Co. has increased its freezing capacity by adding to its equipment a Progress freezer and a mixing vat. The company plans to install a combination can washer, sterilizer and dryer.

PENNSYLVANIA.

Altoona—The Hoffman Bros. Co. began operations in its new plant located at Ninth st. on May 30. The building which was designed by The McCormick Co., of Pittsburg, is of brick and occrete construction and is three stories and basement for the most part of the building with two stories ice manufacturing, power plant and garage at the rear. Bedford—James H. Laher has established an ice cream plant here with a daily capacity of about 1,000 gal.

Carlisle—Christman Brothers are having the Cherry-Bassett Co. install in their ice cream plant a 300-gal. batch mixer, motor driven, a No. 2 Viscolizer, a 3,000-lb. tubular cooler and two 300-gal. storage vats.

Connellsville—The F. C. Rose Ice Cream Co. has increased its hardening room capacity to 2,500 gallons and added new equipment including an Emery Thompson freezer, a 25-ton per hour Creasy ice crusher and a truck with Meyer refrigerator body.

Skamokin—The McClow Ice Cream Co. recently installed a 50-ton horizontal corliss driven Frick refrigerating machine complete and also increased its

hardening room capacity.

Tamaqua—The M. & G. Company has enlarged its iee cream plant adding two 9 by 9 enclosed type York refrigerating machines with high side complete, two C. P. freezers and one hardening room 12 by 30 ft. with ante room 12 by 20 ft. This brings the daily capacity of the plant up to 4,000 gallons of ice cream and 40 tons of ice.

Tarentum—Messrs. Gahoe and Lee, of Oakmont, plan to open an ice cream and ice plant on property recently purchased here.

Thompsontown—The Breyer Ice Cream Co. has installed in its plant a 20-ton vertical single-acting, enclosed York refrigerating machine direct connected to a vertical enclosed slide valve engine and condensing side.

Wilkes-Barre—The Smith & Clark Co. has purchased the property opposite its plant on Tannery st. and is erecting a garage 50 by 100 ft. on part of it.

RIIODE ISLAND.

Westerly—M. F. Doughty and George Thomas recently opened an ice cream plant in the Joslin-Lena bldg. on Mechanic st. The new plant has a capacity of 500 gal. a day.

SOUTH CAROLINA.

Chester—Thero Petrelious has established an ice cream plant here.

TEXAS.

Corpus Christi—Brunson & Wayne have installed in their ice cream plant a 3-ton York refrigerating machine.

Dallas—The Sunbeam Ice Cream Co. has been incorporated with a capital stock of \$100,000 by J. H. Marshall, Arthur Marshall and J. J. Marshall.

Ranger-The Kulin Ice Cream Co. has been incorporated with a capital stock of \$50,000.

Sherman—The Jenson-Eckel Ice Cream Co. recently began operations in its new \$50,000 plant which has a capacity of 3,000 gal. daily.

VERMONT.

Bellows Falls—C. A. Hastings & Son have installed a new ice cream plant in connection with their milk plant.

VIRGINIA.

Bristol-The Bristol Ice Cream Co, has just completed a concrete and steel addition to its plant, 40 by 85 ft. The company has built in two additional hardening rooms, a 285-ton ice storage room and 15-ton ice tank, and installed additional machinery including four 500 gal. vitrified enameled pasteurizers, a milk concentrating plant of 200 gal. hourly capacity and two 30-ton ice machines. A. E. Fuller, manager of the company, states that plans are under consideration for the erection of a two-story concrete and steel building for storage purposes.

Newport News—The Sanitary Milk Products Co. has been purchased by Paul Nelson of the Nelson lee Cream Co., of Portage, Pa., and will be known as the Nelson Creamery Co. The re-organized company will manufacture dairy products including ice cream to a capacity of over 1,500 gal. a day besides producing 65-tons of ice every 24 hours.

Timberville—The Chapin-Sacks Corp. has installed a 4-ton York refrigerating machine in its branch plant here.

WASHINGTON.

Mount Vernon-W. P. Lux has installed in his ice cream factory a 4-ton ice making machine and storage for 10 tons of ice.

Okanogan—S. Towne, H. Wilson and associates are establishing an ice cream factory here and at Waterville, Wash.

· Spokane—The Inland Products Co. is installing an ice cream plant in connection with its candy factory.

WEST VIRGINIA.

Hinton-The Cline Ice Cream Co. of Charleston, has opened a branch factory here.

WISCONSIN,

Jamesville—The Shurtleff Co., wholesale manufacturers of ice cream, founded in 1878 by G. A. Shurtleff, has undergone a change of ownership, H. G. Shurtleff having sold his interest to C. P. Touton, who is not the sole owner. The name of the firm has been changed to the Shurtleff Ice Cream Co. The new officers of the company are President and Secretary, Chas. P. Touton; Vice-Pres. and Treas, Belle M. Touton; Manager, A. E. Piper and Cashier, E. J. Boomer. The plant has recently been remodeled and enlarged.

Stevens Point—F. O. Hodsdon has added new machinery to his ice cream plant including a homogenizer and brine freezers. Mr. Hodsdon says he expects to make further added improvements in the near future.

CATALOGUES, ETC.

The McLaren Products Co., Dayton, Ohio, recently issued a circular to the jobbing trade depicting McLaren's "Real Cake" cones and giving current prices of the same.

The Manning Manufacturing Co., Rutland, Vt., is working on new circulars covering its complete line of iccream, creamery and dary equipment and supplies. The first of the series is a circular on Manning surface tubular milk coolers which was recently issued. Others will follow.

The Jamison Cold Storage Door Co. Hagerstown, Md., has just issued general catalog No. 10 covering its line of heavy duty cold storage doors and similar equipment. The 80-page catalog is illustrated and divided into fifteen chapters.

TRADE NOTES

The J. G. Cherry Co., Cedar Rapids, Iowa, recently opened a Chicago office at Room 401 Standard Trust & Savings Bank bldg., 105 W. Monroe st., with J. B. Addison in charge.

The Frederick C. Mathews Co., Detroit, Mich, recently announced the addition of Alan R. Fernald to his staff for the development of merchandising and educational campaigns for the ice cream and milk trades. Mr. Fernald is neither a new-comer to the trade nor a new associate of Mr. Mathews. Back in 1900 Mr. Fernald was a member of the sales force of the J. B. Ford Co., while for a period of five years prior to 1914 when Mr. Mathews was president of Mathews, Kaye, Mann Co., Mr. Fernald was secretary of that company. For the past seven years he has been associated with various interests of John N. Willys, President of the Willys-Overland Co., Toledo.

Louis Cummings, manufacturer of the Cyclone ice cream brick cutter recently moved his factory from 1035 Third ave., to larger quarters at 201 E. 66th st., New York, N. Y.

The Federal Motor Truck Co., Detroit, Mich., has announced its new 5-6 ton model truck possessing a number of new features.

August Mordin, architect, Mills bldg., San Francisco, Calif., writes that he would be pleased to receive catalogues covering machinery, equipment and supplies for ice cream, ice and milk plants and cold storage buildings.

C. W. Wellman, manufacturer of The Wellman steam turbine engine, Oshkosh, Wis., recently announced his new class B type steam turbine engine made in units from ½ to 2 h.p. which can be run any speed from 100 to 6,000 r.p.m.

GET IT CASHED AT THE FOUNTAIN

Frank A. Egan, writing to the editor of The New York Times, believes that the soda fountain and ice cream parlor must take the place of the saloon in cashing the wage check. He writes:

The answer to the proposition to defeat the payroll robberies by paying wages by check is: Can the ice cream counter take the place left vacant by the beer one? If it can, then the wage check is a possibility, but otherwise the wage check hasn't a Chinaman's chance, whatever that may be.

NEBRASKA STATISTICS

The Bureau of Markets and Marketing, State Department of Agriculture, reports that fifty-four licensed wholesale and sixty-one licensed retail ice cream manufacturers in Nebraska manufactured last year a total of 2,308,180 gallons of ice cream, consisting of 2,054,020 gallons of plain and 254,160 gallons of fruit ice cream.

OBITUARY

J. W. Fleming

J. W. Fleming of the Fleming Ice Cream Co., of Jackson, Michigan, died at his home on May 6. Mr. Fleming was one of the pioneers in the Michigan ice cream trade and an ardent association worker. He was known favorably among his business associates for his determined position in standing firm for what he considered right, proper and honorable.

Mr. Fleming is survived by his wife, two daughters, Mrs. L. N. Hayden, of Detroit, and Alta L. Fleming of Jackson, and three sons, Fred W. Fleming of the Fleming Ice Cream Co., of Bay City and Jay C. and Roland E. Fleming, who succeed their father in the management of the Fleming Ice Cream Co. of Jackson.

WANTS, FOR SALE, ETC.

Advertisements under this head, six cents a word each insertion, classification head and address not to be counted. Minimum charge \$1.00. Remittance Must Arcompany Order. Help and eltuation ,want ads will be given one insertion free.

SITUATION WANTED—As foremen or homogenizer operator by first class see crosm maker with 10 years' experience. Understands emulsifying and homogenizing thoroughly, Give full particulars as to salary and conditions in first letter. Address W. L. D., care The Ice Cream Trade Journal.

STEATON WANTED—As foreman in manufacturing department ice reram plant; understand patterization, standardizing, homogenizing, refrigeration; can handle help and produce results; twenty years experience covering in ice cream manufacture. Address O. S., care Tux Ice Cacam Taxon Journal of Tux

SITUATION WANTED—As ice cream maker or foreman in ice cream plant. Fully experienced in freezing, mixing, standardizing, testing, etc. At present employed but desire change. Address C. R., care The Ice Cream Tambe Jounnal.

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STUTATION WASTED-College redusate in chemistry desireconnection with feet ream company. Four years laboratory and managerial experience in the dairy industry. Thoroughly familiar with homogenized and pasterried iee cream mixes. References. Address E. B. care The Cr. Cream Trade Journal.

SITUATION WANTED—As factury manager by capable man with practical experience in modern ice cream factory. Fully understands the different branches of the business Address Capable, eare THE Ice Caeam Taxop JORNAL.

STUATION WANTED—Manager or superintendent of ice cream plant. Ten years experience in all things pertaining to

the ice cream business. Standardizing of total solids, homogenizing, pasteurizing. Address W. M., care The ICE CREAM TRADE JOURNAL.

SITUATIONS WANTED—By experienced men at salaries from \$5.00 to \$200 a week. Our men really know the business. Address lee Cream Managers & Superintendents Association, E. A. Kellogg, Secretary, Room 604, 286 Fifth Ave., New York City. Telephone Longaere 4073.

HELP WANTED—Experienced ice cream maker who thoroughly understands mixing, emulsifying and freezing and who can make ices, sherbets and fancy bricks. Address F. H., care The I.E. CREAM TAMP JOURNAL

Help Wanteb—Ice cream factory in eastern city with growing business wants tee cream maker as foreman. We want a man who has had real experience in up-to-date plant. State wages desired, references, age. Address X. Y., care The Ice Caram Taone Journal.

HELP WANTED—Manager for our bulk extract department.

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For SALE—A complete tee cream plant in southern city of seventy fave thousand. Plant is moderally equipped in seventy fave thousand, but it moderally equipped in case of the selling, unable to give personal attention because of other interests. Splendid opportunity. Require forty thousand dollars to handle. Don't answer unless you mean business. Address Investment, care Tua Ict CEAM TRAD TOURNAL.

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Fos SALE—June 1 we discontinued two-gallon cans; con-sequently we have 5,000 we will sell cheap. Trojan Ice Cream Co., Troy, N. Y.

Foa Salze-Ft. Atkinson, Miller, Thompson and other belt and motor drive 40 and 80-qt. freezers; can washers and sterilizers; Nn. 49 and other size Creasy fee breakers; 1.2,3 and 600-ral. Cherry, Reid and C. P. Vats. 1,000 3-pai new cans at \$15.0 also other sizes; tubs. tub and lank lined cabinets. Send for complete fist. Phila-delphia Retinning Co., North Philadelphia, Fa.

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belt drive, brine box and pump. One Miller-Tyson 40-qt. brine ice cream freezer, belt drive. Both first class condition. Boss Ice Cream Co., 142 E. Market St., condition. Bos

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FOR SALE-One Miller ice cream freezer, belt drive, cheap. Address C. V. Cresmery & Dairy Co., Chambersburg, Pa. FOR SALE-Two Progress brine ice cream freezers, interested write us. We can save you money. A Progress, care The ICE CREAM TRADE JOURNAL. Address

For Sale-One 5-ton belt driven Remington machine, with complete high pressure side, almost new. Also 10-ton Creamery Package for immediate shipment. W. C. Hardy, 1215 Filbert st., Philadelphia, Pa.

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FOR SALE—Motor driven National cash register designed especially for use in a creamery. Machine in excellent condition, If interested address National, care Tha lea CREAM TRADE JOURNAL.

The future of the American nation depends greatly upon the success in uniting all racial traits in our population into one single racial element. There is a tendency among some native-born with limited vision to resent the foreign-born as a class. Immigrants are anxious to contribute to the upbuilding of our country, eager to live up to every American ideal and to become a part of our social and political structure. We cannot afford to alienate these people by setting up barriers of prejudice, misunderstanding and undeserved suspicion.-Svenska Familie Journal, Minneapolis, Minn.

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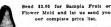
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GET AND HOLD



BUSINESS PEACH

the consumer buys service as much be ready to give the utmost in service a see your product by supplying mole-cour customers are more pleased as better prices at small additional

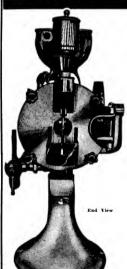


our complate prica list. FR. KRAUSS' SON



333 W. 18th Street, New York, N.Y. GRAPE:





Stop Up All the Little Leaks and Losses

As profit margins grow narrower Plant-Efficiency becomes more vital.

And the best way to make a profit out of ice cream is to stop up all the little leaks and losses.

Cherry Equipment will help you do this. It includes heavy machinery such as Crushers, Pasteurizers, Ripeners, Coolers, Freezers; and, a long line of small tools and accessories.

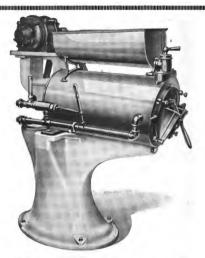
Cherry Horizontal Brine Freezers

Cherry Horizontal power-driven Brine Freezers are proving their ability to deliver a maximum quantity of super-quality ice cream, at minimum cost for power, brine and labor.

Their superior speed, convenience, ease of cleaning and high producing-efficiency are proved daily by plants operating them side-by-side with other makes.

Send for our Bulletin No. 2011, a little gold mine of practical information for the ice cream man.

J.G.CHERRY COMPANY
St. Poul, Pilor. Tama () low. Pooria, III.



The Liking Lasts and So Does the Freezer

While everybody likes his own best—and owners of brine freezers are no exception—lasting regard can come only if the article possessed gives continuous satisfaction.

The mechanical principle and design, the material and workmanship are the factors which win and hold favor for brine freezers as for any other equipment.

EMERY THOMPSON FREEZERS—dating back to the beginning of brine freezers—are standard inkprinciple, in design, in material and workmanship. That is why they are liked best by their owners and this liking increases with use.

Your order will be given prompt attention.

Write for our catalog today.

Emery Thompson Machine & Supply Co.

271 Rider Avenue

(6-8 Canal Place, Bronx)

New York City







Progress Vertical and Horizontal lee Cream Freezers,





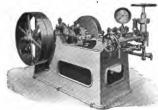






Dairymen's Milk and Ice Cream Cans-Dairymen's Brick Moulds.

MSL-1



Progress Homogenizer.

We also make Davia Milk Machinery, Diabrow Churas, Economy Pasteurizers, Minnetonan Butter Makers, Pumps. Fittings. Testers, Refrigerating Equipment, etc. Write nearest office about any machinery and supplies you need.

Tell your friends and neighbors you are going to the World's Greatest Dairy Show, Minnesota Fair Grounds, Oct. 8 to 15.

Write nearest office for our Low Prices and incremation on lee Cream Machinery and Supplies. We manufacture lee Cream Presezes, Homogenizers, Batch Misers, Cans and Brick Moulds, Coll Vats and Cream Ripeners, Starter Cans, Weigh Cans and Tanks, Milk and lee Cream Can Washers, Aumonia Compressors, Brine Paums and medical for the proper making of lee Cream. Mail the coupon for latest statlog—write on the margin what you are interested in.

DAVIS-WATKINS DAIRYMEN'S MFG.CO.

130 North Wells St., Chicago, Ill.

Or address Jersey City, N. J., North Chicago, Ill., Kansas City, Mo., Denver, Colo., San Francisco, Calif., Scattle, Wash.

Interested in items noted on margin of this coupor

Name.
Address.
City. State

Makers of the Famous Dairymen's Cans

THE GLACIFER DRY PACKER



PATENTED
Preservation 18-36 Hours

For Express Shipments

Net Cost of Shipment—including Investment and Overhead Charges. Present method, per gal. . 12c-20c Glacifer Method, "" . 7c-10c (Reduced Express Charges Not Included)

Your Consignees Will Want This Package on Account of The Great Reduction in Express Charges, Its Perfect Cleanliness and Wonderful Preservation Properties,

THE GLACIFER COMPANY

102 Merrimac St.

Boston, Mass.

D-C Iceless Express Container



Price \$15, F.O.B. Factory. Discounts on quantities.

No Longer An Experiment

No Ice—No Salt—No Tub—No Labor
No Salty Ice Cream—eyer.

Guaranteed to hold well-hardened ice cream perfectly for 12 hours under most trying conditions. Under favorable conditions, as in a basement or other moderately cool place it will hold ice cream 24 hours or longer, thus making it possible to deliver Sunday supplies on Saturday.

Shipping weight about 85 lbs. Reduces express charges approximately 25%.

One shipper reports that savings effected, including express saving, average 10 cents a gallon.

D-C Refrigerating Cover

Converts a shipping container into a Cabinet



Reduces use of ice and salt for holding purposes to a minimum.



Practically eliminates labor of packing. Price \$10, F.O.B. Factory

At the recent Confectioners' Exhibition at Atlantic City a 5-gallon can of ice cream was held in perfect dishing condition for 24 hours with less than 10 pounds of ice and salt by using the D. C. Refrigerating Cover in combination with the D. C. Iceless Express Container.

These Decy inventions open up a vast field heretofore practically closed to shippers of ice cream, and insure profits through the savings effected.

Decy Iceless Express Container Co., Inc.

Times Building R

Room 1001

New York, N. Y.

RETINNING ICE CREAM CANS

A Special Department Old Cana

We do refinishing of old ice cream cans in a special department of our plant which devotes its entire time throughout the year to doing this one thing and doing it well.

Old Cans Made New At Low Cost and used to know how to fix up your otherwise hopelessly rusty old cans so they will be tight and bright and good as new. IT IS NOT EXPENSIVE AND PAYS YOU A DIVIDEND. The government recommends retinning of old cans as a measure of economy.

Sample Can Retinned Free This is the time of year to send cans in for renewal. Send us a sample can NOW. We will repair and retin it without charge and return it promptly, so you can see the quality of our work. Write us when you ship it, so we will know whose it is, and we will do the rest.

OAKES & BURGER CO.

ESTABLISHED 1873

CATTARAUGUS, N. Y.

EVERY Ice Cream and Milk Handling Plant, should not fail to investigate the superior merits of the famous

Leffel Scotch Marine Boilers

built in a variety of sizes from 6 H. P. to 100 H. P., and to meet all requirements of the different State Boiler Laws. This Boiler is confdently offered as meeting in fullest measure and most satisfactory manner, every requirement of the trade, as amply proven by the large number of pleased customers using them for many years.

This Company also builds a line of Vertical Boilers in sizes 3 H. P. and larger.

Complete catalog with information of interest and value on request.



JAMES LEFFEL & CO.

BOX 323

SPRINGFIELD, OHIO

2005



Natural Gas or Liquid Fuel

Power costs reduced 25 to 75 per cent.

Write for list of ice cream manufacturers using Foos Engines.

THE FOOS GAS ENGINE CO., SPRINGFIELD, OHIO

Mojonnier Tester

An Essential in All Up-to-Date Ice Cream Plants. Soon Pays for Itself — Then Pays Dividends, Plants.



739 W. Jackson Boul.

BRANCH SALES OFFICES.

New York, 79 Shorman Av. Rt. Louis, 4931 Margaretta Av. Atlanta, 301 Bedford Place. Seattle, 600-A Central Bilds. Chicago

In Your

Creamery or Hardening Room-

Jamison's "Noequal" Revolving Door



Passes your ice cream and milk cans back and forth without loss of temperaturerequires but one operator when fitted with unloading device. Great saver of time and labor—specially constructed for constant hard service. 20 and 40 quart sizes in stock. Ask for catalogue No. 9 with full details.

JAMISON COLD STORAGE DOOR CO.

Formerly Jones Cold Store Door Co.

Hagerstown, Maryland, U. S. A.

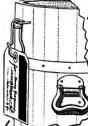
TAG HOOKS SAVE DOLLARS

Why use expensive, untidy, time-losing strings or wires while tagging your tubs or pails of ice cream?

SNAP 'EM ON

And use our rustproof TAG HOOKS

DATE BROS Schenectady N. Y.



September 1997

You Can't Strike Oil by Digging with a Pick



You may find a trickle to indicate the wealth that lies beneath the surface, but to get oil in paying quantities you must sink a well.

It is the same way with Audit Bureau Circulation Reports. A glance at the first page only indicates the wealth of information which lies within

and that wealth of information is obtainable by every advertiser, advertising agency and publisher affiliated with the A. B. C.

The modern Space Buyer is going to throw aside preferences and prejudices and dig deep in the merchandising value of every publication which appears on his schedule. He's going to make an advertising dollar work harder than it ever worked before.

Scientific Space Selection will be his creed.

To jot down figures on "Net Paid Circulation" will no longer suffice. How that circulation was obtained, where it goes, to whom it goes, and why it goes, must all be answered before white space is purchased

—and with a copy of the A. B. C. Publisher's Statement, the Auditor's Report and a copy of the publication on your desk, you have concise, authentic information which will enable you to sink a well of facts down to the levels of paying merchandising.

The Ice Cream Trade Journal is a member of the A. B. C. and welcomes comparison of circulation facts. Publisher's Statements or Audit Reports upon reducat.



Audit Bureau of Circulations
202 South State Street Chicago 1347 Fifth Avenue New York

WRITE OR WIRE YOUR CAN ORDERS FOR

IMMEDIATE DELIVERY

(Repeat Orders Now Coming In Prove Worth and Quality of These Cans)

RIVETLESS-SOLDERLESS

Ice Cream C

"Three Pieces Welded Into One"

NO SOLDER NO RIVETS NO LEAKS

EVERY CAN GUARANTEED IN EVERY PARTICULAR

Electric Weld Ice Cream Cans are practically seamless being made complete in the black and then tinned by soaking in pure straits in. In addition to their strong, sturdy construction due to welding, they can be retinned over and over again at less cost due to the absence of solder and the fact that they are practically one piece.



TEN BIG FEATURES:

- -Low cost.
- 2-Absolutely sanitary, no solder, no lead to contaminate contents.
- Adaptability to retinning. Easily and cheaply retinned—do it yourself.
- -Eliminates the leak nuisance. Bottom and cylinder welded into
- a solid mass-can't leak. Strength where needed.
 - -Rust-resisting metal. -"Non-deforming" lid.
- Non-deforming ind.
 Exact capacities, standard dimensions. Lids interchangeable with all standard makes of cans,
- embossed with your name, capacity in quarts, liquid.

 -Quick delivery from our eight warehouses Boston to San
- Francisco. 10-Endorsed by leading manufacturers.

NEW PRICE LIST READY Electric Weld Cans for service.

Send us a trial order for these cans and satisfy yourself now before in-vesting money in the old style, wasteful riveted and soldered cans.

(FULLY PROTECTED BY PATENTS PENDING)



TORONTO, CANADA BIRMINGHAM, ALA

PHILADELPHIA CHICAGO

LOS ANGELES CONSHOHOCKEN, PA

ADDRESS ALL COMMUNICATIONS TO MAIN OFFICE

ESTABLISHED 1845

LOWN & SON POUGHKEEPSIE, N. Y.

Manufacturers of Ice Cream Tubs for 60 years

Sizes: 1 Qt. to 50 Qts. Always In Stock

Special Sizes for Cabinets or Packing to Order

RETINNING

Ice Cream and Milk Cans

TURN YOUR RUSTY CANS INTO GOLD

Why discard an ice crann or milk can or any tinned can or kettle which is all there except the protective Our process of re-tlinning puts on a heavier coat than the can had originally, so you have better can equipment at a fraction of the coat of sew clue to the coat of sew the coat of sew the same than the can had originally, so you have better can be compared to the candidate of the candidate

Sanitary Tinning and Manufacturing Co. 8758-3759 E. 98rd Street Cleveland, Ohio



Dairymen and Ice Cream Manufacturers:

Have begun to realize the value of

DISTINCTIVE

TUBS AND CANS Attractively painted

with



Derycote is the wonderful new Package Enamel that keeps your tubs and cans fresh and clean.

Manufactured by



The National Paint & Varnish Co.

Cleveland, Ohio



MILK ENGINEERS



Are You Proud of Your Plant?

Few ever see it. Instead, they judge it by the only part of your equipment they do see—your delivery trucks.

If they are clean, quiet, odorless and well-kept electric trucks, people take it for granted that your plant also is sanitary, modern and well cared for.

In addition to saving \$5.00 to \$15.00 a day in operating cost, electric trucks create a favorable impression for your product that is worth as cumulative advertising many times this tangible saving.

C-T no-differential drive electric trucks are absolutely dependable the year round, in all kinds of weather.



Ask the Supplee-Wills-Jones Company, Philadelphia, what they think of their six C-T Electric trucks

Commercial Truck Company

FACTORY AND GENERAL OFFICES

Philadelphia





Ward Electric Truck equipped



"If there were any other trucks or batteries that would do the work better or more economically we would have bought them; so far they have surpassed our expectations."

"We have used Electric trucks equipped with Exide-Ironclad Batteries for eight years, and each battery from three to four years. Our trucks average about 30 miles per day."

"Our service has not been interrupted in any manner whatsoever due to any trouble of the batteries."

"We believe the Ironclad to be the most efficient battery and covering all electric truck needs."



C-T Electric Truck equipped with Exide-Ironclad Batters

Why the Exide-Ironclad Battery?

- I-The Exide-Ironclad Battery in a truck is a guarantee of ample power; it supplies all the power the mechanism of the truck can utilize power to climb stiff grades or pull out of holes easily and surely.
- 2—The Exide-Ironclad Battery maintains a good voltage throughout a normal day's work; therefore the speed of the truck remains close to maximum all day long.
- 3—The Exide-Ironclad Battery cuts your operation costs on account of its extra high efficiency. The truck owner gets back in useful truckmoving work the maximum possible percentage of the power he pays for in charging the battery.
- 4—Special features of design, in plates, separators, and jars, make the Exide-Ironclad a battery of unusual strength. Under all sorts of operating conditions Excide-Ironclad Batteries, for the past ten years, have proved their ability to stand punishment. Designed and built to give service, the Excide-Ironclad Battery is the result of 33 years of battery-building experience.
- 5—The Exide-Ironclad Battery is different from any other storage battery made; it is the only storage battery that combines all the vital features of a good vehicle battery—maximum power ability, ruggedness, long life, and high efficiency.



This booklet
"Keep Them
Moving" shows
why most electric trucks are
bought on repeat
orders. Write for





Atlantic Electric Truck equipped



"Couple Gear" Electric Truck equipped

For City Hauling— Why Not an Electric Truck?

Most city hauling is from store to store or from house to house, of the short-haul-many-stop variety; that's where the electric truck proves its value.

The electric truck equipped with an Exide-Ironclad Battery does the work at low cost for maintenance and operation and gives day-in and day-out service.

Remember that the Exide-Ironclad is the only storage battery made that has all the features essential to suc-

cessful truck operation—power ability, ruggedness, high efficiency, and long life. It is built and backed by the largest manufacturer of storage batteries in the world, and has been tested and proved by nine years' service under all kinds of service conditions in submarines, mine locomotives, industrial trucks and tractors, and electric street vehicles.

Send for list of truck manufacturers—and a free copy of "Keep Them Moving," and learn how you can cut your haulage costs with electrics.

THE ELECTRIC STORAGE BATTERY CO.

Oldest and largest manufacturers in the world of Storage Batteries for every purpose
1888 PHILADELPHIA 1921

Branches in seventeen cities

Exide Batteries of Canada, Limited, 133-157 Dulferin Street, Toronto



Are you willing to face the facts on Delivery Costs?

No business has higher standards of service than

You are not content with merely making a good product. You go way beyond this. You use every effort to get your product to your customers in per-

fect condition, and to make sure that it is kept in perfect condition until your custom-

ers sell it to their customers.

You put service first without regard to cost, and the result is that your delivery costs are altogether too high.

When you had only horses and wagons, you could not get over your routes fast enough, and you could not cover outlying sections and nearby cities and towns satisfactorily. In the extreme heat of summer, when the demands for service are greatest, your horses could not al-

ways measure up to your needs. In the winter time, when business is your needs. In the winter limit, which manners of comparatively slow, horses had no regard for your pocketbook—they ate their heads off, so to speak, and had to be taken care of just as diligently as though they were working hard. And besides all these things, the uncleanliness of horses was out of keep-

ing with the cleanliness of your business.

With the coming of gasoline trucks you were among the first to use them on long routes and you found that, on these routes, they saved you money and enabled you to secure business in territories you had not been able to cover satisfactorily before.

This led you to try them on your frequent-stop city routes, only to find, if you keep costs by routes, that the cost of operating a gasoline truck on these routes is even greater than the cost of operating horses and wagons.

Why not cut your delivery costs on these frequentstop routes?

You can do it with Ward Electric trucks. If you will divide your costs according to routes or length of haul, you will find that Ward Electrics will save you 20% to 35%, and in some cases more than 50%. on your city routes in comparison with gasoline trucks or horses-and-wagons.

The Ward Electric models generally used for city routes operate at a controlled speed of 10 to 12 miles an hour. This is twice as fast as average horse delivery; saves time on even the most congested routes. It is the most efficient motor-truck speed for economy-because tire costs and a number of maintenance costs increase almost with the square of the speed-at 20 miles an hour these costs are nearly four times as much as at 10 miles an hour. Can you afford 20 miles an hour?

But even when compared with a gasoline truck operating at 10 miles an hour, Ward Electrics save money, because experience has shown that light gasoline cars that could do, say, 20 miles on a gallon of gasoline in straight-away running, can only do 8 miles per

gallon on frequent-stop routes, due to the high consumption of gasoline in starting and stopping, not to mention the strain on the mechanism and the greater wear and tear on tires.

Ward Electric Trucks are built to last 10 years and upwardtwice the average life of a horse in frequentstop delivery and more than twice the average life of a gas car in this same service.

Another economy is that you can keep and Ward charge your Ward Electrics right at your loading platform, doing away with the stable and garage; or you

can greatly decrease your stable space, because they require only 1/3 to 1/5 as much room as horses and wagons and less than gas trucks.

We make this clean-cut statement. Look at your routes individually and you will find that on a majority of your city routes you can make such substantial reductions by the use of Ward Electrics that you could not afford to operate your horses and wagons or gas trucks if you had gotten them

Attach this coupon to your letterhead or card, and we will endeavor to submit definite informaand we will endeavor to submit definite informa-tion applying to your routes that will prove the case. If we prove this case, we are going to make more money for you than we can possibly make for ourselves. So put it up to us.



People don't see how your product is made-but they do see the way in which you deliver it.

Ward Motor Vehicle Co. Mt. Vernon, N. Y.

Ward 3	lotor Y	chle	le Co.	, Mt. Ve	rnon, N. Y	
Pleas		us	your	book of	facts on	delivery
Name						
Address						

Ward Electrics 6 Sizes, 750 Lbs. to 10,000 Lbs.



Electric Transportation

Better and Cheaper

Today, it is the electric truck that assures prompt and economical haulage and delivery.

For city service with its many stops, waits and short hauls, the electric truck has proved dependable, with lowest up-keep cost and the highest service efficiency.

Edison Storage Batteries

with their steel and iron construction assure the greatest number of working days from your electric trucks.

It is this rugged strength of Edison Storage Batteries that keeps your electrics on the job.

Our Bulletin 500 BD will show you why many firms have chosen Edison equipped electric trucks for their delivery systems. Write for it—TODAY.



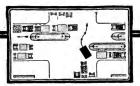
Edison Storage Battery Co.

Factory and Main Office: Orange, N. Y.

DISTRIBUTORS IN

New York, Boston, Chicago, Cleveland, Detroit, Seattle, Los Angeles, San Francisco, New Orleans, Atlanta, Washington, Philadelphia, Pittsburgh, St. Louis, Montreal.



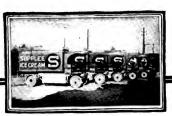


FIRST out of the traffic! Rapid pick-up ease of handling—short wheelbase—power instantly applied—ability to thread in and out of close traffic—all contribute to that unmatched economy which gives Walker Electrics first place for city haulage.

You men who have borne the burden of keeping up truck fleets will be interested in evidence we have of Walker fleets that are off duty less than 3% of the time, and are depreciated at 10% and less per year. Write for these money-saving facts.

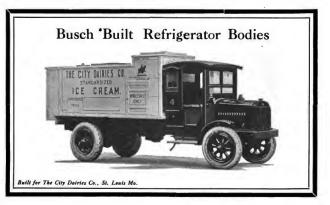
WALKER Electric TRUCKS LOWEST TRUCKING COST

WALKER VEHICLE COMPANY CHICAGO NEW YORK BOSTON PHILADELPHIA



AMERICA'S
LARGEST
MANUFACTURER OF
ELECTRIC
R O A D
TRUCKS





Cut the Cost of Ice Cream Delivery

"Busch Built" motor truck bodies equipped with patented A. B. C. (Automatic Brine Circulation) for refrigeration, cut the cost of ice cream deliveries.

These bodies provide the only thoroughly efficient, sanitary and economical means of wholesale distribution where refrigeration is essential - this has been conclusively proven by A. B. C. bodies in actual service for many nationally known manufacturers.

Write today for particulars and prices

One enthusiastic owner of eleven A. B. C. bodies asserts that each one affects a NET SAVING in excess of the total cost of the body in a single year!



Anheuser-Busch, St. Louis, Mo., U.S.A. Authorized Builders for the United States of A.B.C. type

Refrigerator Bodies Also Builders of Highest Grade Truck Bodies of all Descriptions GENERAL OFFICES AND MAIN PLANT-ST. LOUIS, MO.

Branch Construction Plants in New England, California, Pennsylvania, Chicago



Buy Disinfectant-Not Water

Three hundred gailons of disinfectant solution for \$3.00—when you buy it in powder form Why keep on paying disinfectant prices for water? Save nine-tenths of your disinfectant expense by paying

ONE CENT A GALLON FOR STERILAC

DISINFECTS-DEODORIZES-STERILIZES

DISINFECTS—DEODORIZES—STRRILIZES
Kills germs and bacteria; is many times as
effective as carbolic acid. Deodorizes and leaves
no chemical smell. Non-poisonous and nonsafe it may be used to purify drinking water.
STERILIZE disinfects and deodorizes miking
machines, cream separators, cans, bottles, reStands hot weather much better than other disinfectant solutions.
Consex as a powder—no freezing or breakase in ablument no heavy freight charges.

SAMPLE 10 GALLONS FREE

Bottle to make 75 gallons-\$1.00 to make 300 gallons-\$3.00

Ask your dealer for STERILAC or order direct. Write us for free sample and descriptive printed matter, TODAY.

THE ABBOTT LABORATORIES. 1776 LAWRENCE AVE., CHICAGO

WOLD !

IN DELIVERY EQUIPMENT AN INVESTMENT

should not be an experiment. You should have the reasonable assurance of continued service. Meyer body equipment for Ice Cream Manufacturers is a permanent investment backed by over a quarter of a century of experience.



Write now for spring deliveries.

MEYER WAGON WORKS 216 Elm Street, Buffalo, N.



First **Impressions**

It is far easier to create a favorable first impression than to overcome a prejudice.

To know that the fat content as well as the solids content of ice cream are up to standard is not necessarily a guarantee of a pure, wholesome product,

There are many other factors which determine quality, most important of which is the insurance of sweet, fresh, safe, sanitary cleanliness to every step of the manufacturing process.

These sanitary conditions, so easily obtained in hundreds of ice cream plants by the use of



insure to a well-balanced mix such positive protection against contamination and loss of quality and flavor, that your ice cream can be depended upon always to create a favorable impression on the

Send your order to your supply house. It cleans clean.

consumer.

THE J. B. FORD CO., Sole Mfrs.

Wyandotte, Mich.



Is Square With You

When you buy B-K you are protected by honest goods which have stood the test of ten years' practical use. B-K provides a quick, cheap and efficient method of sterilizing that is recognized by the dairy industry everywhere.

There is no plan known today that gives as cheap sterilizing as the B-K way. Costs from 6/10 to 9/10 cents per gallon of sterilizing solution. So cheap that cost is insignificant when you count results.

> Economize By Using B-K Send for bulletin 320 on Better Dairy and Food Products

General Laboratories

Madison, Wisconsin

Have you a "Cyclone" Ice Cream Brick Cutter in Your factory?

If not you are behind the times.



3 Cyclones being used at factory of A. CARDANI, 937 6th Ave., N. Y. C.

Get up to date. Write for further Information. Communicate with

LOUIS CUMMINGS 201 E. 66th Street New York, N. Y.

"Last But Not Least"



The ice cream can liner is the last touch which will give your ice cream the wholesome appearance desired.

ALLEN'S ONE-PIECE SANITARY CAN LINERS



Sanitary—Economical—Practical

Samples and prices upon request.

Sold by your Supply Man or write direct to

THE ALLEN CANDY COMPANY

Pontiac, Illinois

Sole Manufacturers

The "NEW ERA" Ice Cream Brick Cutter

The NEW ERA will cut your ice cream into quarts—pints—six, seven, eight or nine cuts to the quart—with speed and accuracy—absolutely uniform.

Motor Driven-Works
Automatically

Reduces Your Brick Cutting Expense.

Simple in Operation.

Durable in Construction.

Write TODAY for Circular.



THE NEW ERA COMPANY, P.O. Box 172, Oshkosh, Wisconsin



In the spirited demand for better looking cartons, Menasha Printing & Carton Company has more than kept pace -lt has led the way.

has more than kept pace—it has sed ine way.

Today we are printing on borboard stock, designs that are unsurpassed anywhere for artistic class and beauty. That's why the Mensaha imprint is found on an increasing number of Ice Cream Cartons each year in all parts of the United States.

To be sure of having your next years supply of cartons when you want them, order early. There are some special advantages in ordering now. We will be glad to tell you about it.

MENASHA PRINTING & CARTON COMPANY

MENASHA

WISCONSIN

CLEVELAND













PERFECTION

ICE CREAM CARTONS

Command atten-tion thru their distinctiveness and

CHICAGO CARTON CO.

4433 Opden Ave. Chicago, Illinois

Dallas, 601 Fim Server
Denver, 1510 Blake Server
Salt Lake Cer., 155 Perpon Ave.

THE C-B CALENDAR



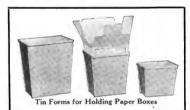


Headquarters for All Good Ice Cream Supplies

Send for the latest descriptive circular, which gives prices on a full line of supplies.



Steel Packing Cans





CHERRY-BASSETT COMPANY

PHILADELPHIA

BALTIMORE

CAN-PRO-CO



The Highest Class Cover

on the Market

Made from heavy, doublefilled duck. They will outdistance any cover on the market.

Buying "Stay-On" Tub Covers is the Remedy Against All Cover Evils

SHRINK PROOF

MILDEW RUST

66 Your Regular THEFT Your Regular Supply Man Supply Man BRINE Has Them Has Them

RAT

WATER **FOOL**

Illustrated Folders and Prices on Request

CAN-PRO-CO APRONS

are a necessity

Order from your dealer

Canvas Products Corporation

19, 21, 23 E. McWilliams Street Fond Du Lac, Wisconsin



Equipment so clean, so fresh and sanitary in appearance that every housekeeper who sees it realizes that milk produced in such a plant is the kind she wants for use at home. Do you want this equipment to be yours or your competitors?

A letter to our home office or any branch will bring information showing how such a plant can be installed in your plant to ensure larger output, at lower production cost.

SERVICE-NOT JUST EQUIPMENT

ELYPIA

The Elyria Enameled Products Co.

NEW YORK, 101 Park Ave.

PITTSBURGH, - Oliver Bailding
SAN FRANCISCO, 16 California St.

LOS ANGELES, San Formando Bids.

Canadian Representatives
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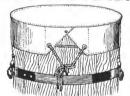
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What Happens?







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If the homogenizing valve is rigid, it frequently becomes clogged with undissolved particles and the pressure increases. An attendant must open the valve by hand and when he does so the pressure falls and undissolved particles go through unbroken. As a result, the product is not uni-formly homogenized. Part is homogenized too much and part is not homogenized enough.

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Since the Gaulin has a patented spring valve, it automatically opens to let undissolved particles pass and gives them a squeeze in passing which pass and gives them a squeeze in passing which breaks them up. Therefore all parts of the batch are homogenized uniformly. Futhermore the Gaulin is the only machine which will pass the product through at a pressure of 3,000 to 4,000 lbs. (which is a necessity if the whole mix is homogenized) and maintain it. Write for "Story of the Homogenizer."

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Can Washer

Washes Cans Clean and at Lightning Speed

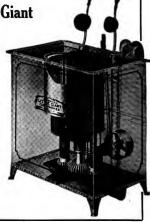
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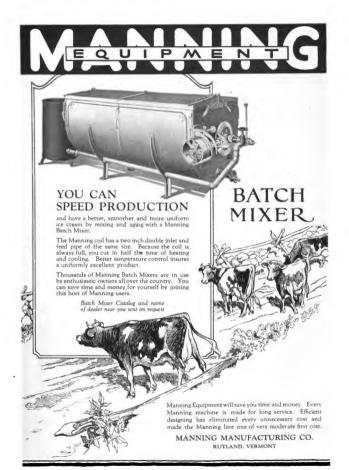
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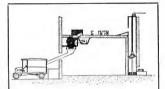
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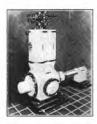
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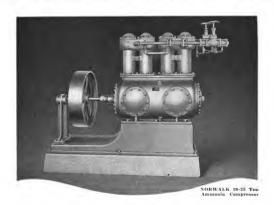
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stands for better sanitary conditions, even temperatures, improvement in the quality of the goods stored and a reduction in the amount of goods lost.

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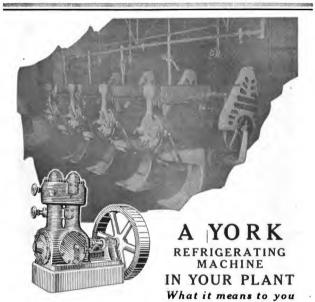
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Freezer has right temperature at all times if compressor is running.

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MILK ENGINEERS 739 W. Jackson Boul.

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Sew York, 79 Sherman Av. St. Louis, 6921 Margaretta Av. Atlanta, 210 Bedford Pl. Seattle, 600-A Central Bidg.

SUPREME MOTOR DRIVEN COMBINATION



Capacity 40 Qts.

Nickel-Silver can, Cover of Tinned Bronze,

self-sealing. Dasher of Tinned Bronze. Breaker can be operated without freezer. Gears and belt covered as required by law. FRANKLIN P. MILLER & SON

East Orange, N. J.



Ice Cream Freezers Ice Breakers

OF ALL CAPACITIES

We can give you quick service.

Rees & Stindt Machine Works INCORPORATED

534-536 West 58th St., New York, N. Y.

Combination Freezer & Breaker



Why They Ordered Their Third 160-Quart U.S. Heavy Duty Freezer

Every progressive manufacturer who can appreciate a good thing, and knows what a modern freezer should be like should read this letter.

This letter says-

"We are so pleased with results.

"Texture of ice cream wonderful,

"No trouble controlling overrun. "Automatic batch control works

like a clock. "Discharge so steady and rapid,

"Speed and convenience of handling remarkable.

"Difficulties of operation eliminated.

"One man can easily handle 3 U. S. Giants while two men would be required to handle the 12 40-qt. freezers otherwise necessary.



SACHTER'S ICE CREAM CO. WHOLESALE & RETAIL

.....

Bannette M W. ABELL SO, 1981 and

U. S. Freezer & Machine Corp., 270 Union Ave., Erocklyn, W. Y.

we are sending you herewith our order for one (1) additional Class t 160 quart U. S. Heavy Buty Freezer.

ee are so pleased with the results obtained from the two Giants that we have in operation that we have now decided to take out all our old freezers, donelating of seven 40 quarts, and use only your large ones.

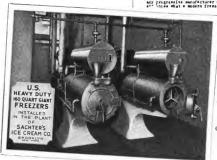
Ore man will be able to handle the three Giants easily, while it sould seep too men pretty busy to handle the twelve 40 quart freezers that would be necessary to give us the same output.

It is interesting to note that while we are increasing our menu-fecturing capacity about 75% (that is free 260 querts to 480 quarts) we will have more open floor space than se did before, and we need this very much for other purposes.

It is not only the eise of the U. S. Giant that sakesus so enthwisette. U. S. Freezers seem to be designed and built respecially to eliminets all the mechanical difficulties and breakings peculiar to eld etyle freezer operation, and the speed and convenience with which they can be handled is remarkable.

The putuable Batch Control works like clock and is a weaderful convenience; the method of clockage is we stady not reput the cover makes it were supported by the cover makes the cover ma

We shall be gled to recommend the U.S. Every Duty French to any progressive manufacturer who can eppreciate a good thing, e-^ ince what e modern freezer should be like



"75% increase in manufacturing capacity with more open floor space than we had before.

"Cover being hinged makes it easy to handle and keeps it off the floor."

Get our circular on "How to Tell a Good Freezer."

U. S. Freezer and Machine Corporation

270 Union Avenue

Brooklyn, N. Y.

Representatives and distributors in all parts of the United States and Canada See Our Exhibit At The National Dairy Show

The real truth Never grows old.

The H. H. Miller Industries Company

Were first to-

Revolutionize—Standardize Successfully develop Brine Ice Cream Freezers.

Our freezers are-

Thoroughly durable—Completely efficient Highly economical—Absolutely sanitary.

Economy means-

Good design—Accessibility of parts
Modern production methods—Choice materials
Skilled labor—Longest experience.

Efficiency means-

Less power to operate—Desired yield More rapid freezing.

Our freezers are the-

Greatest bargains—Greatest money earners Longest wearing—Simplest of construction.

We manufacture under original Patents.

We infringe nobody's rights.

We pioneered the brine ice cream freezer, and today we still set the standards for a host of imitators.

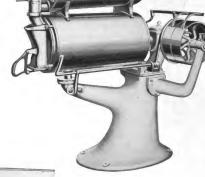
The H. H. Miller Industries Co. CANTON, OHIO

The H. H. Miller Industries Company CANTON, OHIO

Tyson Model "C" Horizontal 40-quart Brine Ice Cream

Freezer. Belt Drive, with







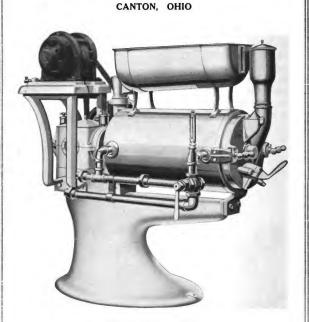
Miller Pyramid Horizontal 40-quart

40-quar Brine

Ice Cream Freezer.

Double Beater.

THE H. H. MILLER INDUSTRIES CO.



"THE MILLER" LIBERTY

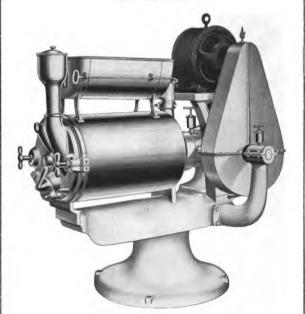
HORIZONTAL BRINE ICE CREAM FREEZER.

DOUBLE BEATER. 60 and 120-QUART.

MOTOR DRIVE ONLY.

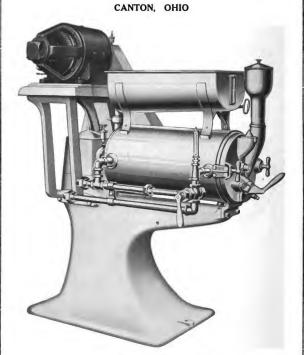
THE H. H. MILLER INDUSTRIES CO.

CANTON, OHIO



"THE MILLER" PYRAMID
HORIZONTAL BRINE ICE CREAM FREEZER.
DOUBLE BEATER. 80-QUART.
MOTOR DRIVE ONLY,

THE H. H. MILLER INDUSTRIES CO.



"THE MILLER" ANVIL BASE.
HORIZONTAL BRINE ICE CREAM FREEZER.
DOUBLE BEATER. 40-QUART.
MOTOR DRIVE.

Hear ye! Hear ye!

June 25, 1915

COMMON PLEAS COURT STARK COUNTY, OHIO

The H. H. Miller Industries Company is successor to The Miller Pasteurizing Machine Co., which, in order fully to protect the rights acquired by it in the property and business, including the good will of the business, of The Tyson Company, joined, as plaintiff, in a suit in the Court of Common Pleas in Stark County, Ohio, against The Tyson Company, The Advance Dairy Machinery Company, and Frank Tyson, among others, as defendants. Upon the issues joined the Court has found in favor of the plaintiff and against The Tyson Company, The Advance Dairy Machinery Company, and Frank Tyson among other defendants.

As a result of the decree in our favor, the defendants, The Tyson Company, The Advance Dairy Machinery Company and Frank Tyson are now enjoined, among other things, from manufacturing or causing to be manufactured, any ice cream freezers covered by Letters Patent of the United States owned by The Tyson Company at the time of the sale; from filling or supplying any order for repairs and parts for such Tyson ice cream freezers; and from doing any act or thing which will directly or indirectly interfere to any extent with our exclusive enjoyment of the right, license and privilege to make, use and sell all devices covered by the claims of such Letters Patent.

They are also now enjoined from doing any act or thing which will directly or indirectly interfere to any extent with our exclusive enjoyment of the business or good will of the business owned by The Tyson Company or Frank Tyson, jointly or severally, at the time of the making of the agreements of sale; and from affirmatively doing any thing to cause the public or trade to believe that The Advance Dairy Machinery Company is the successor in business to The Tyson Company.

The H. H. Miller Industries Company, alone is licensed to make Tyson freezers. It is now in possession of the manufacturing equipment, stock of material, etc., necessary to enable it to continue the Tyson line. We are manufacturing, intend to continue manufacturing and are prepared promptly to furnish Tyson freezers and parts and supplies therefor, maintaining the established standard and quality of product.

We also are alone authorized to fill orders for parts, repairs and supplies for Tyson freezers and are perpared to do so promptly and at reasonable prices.

THE H. H. MILLER INDUSTRIES CO.



THE MODERN METHOD Of Cutting Ice Cream Bricks

The CP Ice Cream Brick Cutting Machine automatically cuts 40 quarts. 80 pints or 80 slices a minute, which, of course is far more rapid than by hand. The bricks are exactly uniform in size, weight for weight and inch for inch.

It is more sanitary, since human hands do not touch the brick during the

process of cutting.

This machine is heartily endorsed by such concerns as the Rieck-McJunkin Dairy Co. of Pittsburgh, Luick Ice Cream Co. of Milwaukee, City Dairies of St. Louis, Hagemeister of Green Bay, Wis., Bendfelt of Milwaukee, Telling-Belle Vernon of Cleveland, and all others who have installed them,

ITS OPERATION

The machine is fitted with a belt conveyor at the delivery end for carrying the bricks as cut to the wrappers. The conveyor is operated by an independent 1/4 H. P. electric motor, and therefore does not interfere with operation of cutting mechanism. Furthermore, it is easy to install. The independent operation of the conveyor belt makes it possible to provide belts of any desired length to fit the plant or number of wrappers required. The conveyor belt may be so arranged that the bricks of cream, after being wrapped and cartoned, can be delivered directly to the freezing room without trucking, if local conditions make such an arrangement desirable.

POWER REQUIRED

The CP Ice Cream Brick Cutting Machine is furnished only with direct connected motor drive. When ordering, be sure to specify the voltage and kind of electric current used-whether A. C. or D. C

Two motors are used on the machine, i. e., a 1 H. P. motor to drive the cutting mechanism and a 1/4 H. P. motor to drive belt conveyor.

When desired, the 1 H. P. motor can be attached to the regular power circuit, and the 1/4 H. P. motor to the lamp circuit. In this case, specifications for both the power and light current should be furnished with the order,

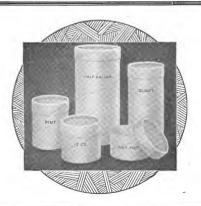
DIMENSIONS

The outfit illustrated occupies a floor space of 4' 8" by 18' 9", of which the cutting machine proper requires a length of 10' and the wrapping table a length of 8' 9". The wrapping table may be made longer at extra cost. The standard outfit complete for shipment weighs 2500 pounds. Please write for complete description and price.

THE CREAMERY PACKAGE MFG. COMPANY

mery Machinery
Ilik and Cream
ding Machinery
M

Ice Cream Makir Machinery Refrigerating Syst



In Perfect Condition

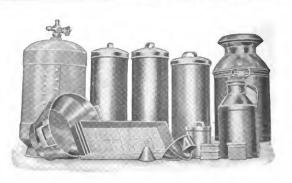
SEALRIGHT Paper Containers for bulk ice cream, filled either direct from the freezers or at the fountain, make carrying ice cream home safe, convenient and easy. They cannot leak - hence no dripping. Ice cream remains in perfect condition for a considerable period of time—no mushy, soft cream.

That's Why People Like to Carry Sealright Containers Order Thru Your Jobber. Write Us For Samples



SEALRIGHT COMPANY, Inc. **FULTON**





QUALITY SERVICE



Keiner-Williams Stamping Co. 8746-82 123rd (Vine) Street Richmond Hill, N. Y.



